—THE—

Therapeutic Gazette

WHOLE SERIES, VOL. XXVI. DETROIT, MICH., NOVEMBER 15, 1902. THIRD SERIES, VOL. XVIII, NO. 11.

CONTENTS.

Original Communications.

Retention of Urine, and its Relief—A Clinical Lecture. By John H. Brinton, M.D., LL.D. 721
Treatment of the Nervous Phenomena in Chronic Nephritis. By James M. Anders, M.D., LL.D. 729
The Action of Strychnine on the Heart, and the Evil of Overdosage. By Roland G. Curtin, M.D. 732
Treatment of Puerperal Eclampsia. By Henry Enos Tuley, A.B., M.D. 735
The Treatment of Cases of Nasal Obstruction. By Dudley S. Reynolds, A.M., M.D. 741

Leading Articles.

The Prophylactic Treatment of Typhoid Fever 744
Some Additional Facts in Regard to Alcohol 745
Antitoxin in Diphtheria 747
An Unusual Result of the Local Application of Mercury 747
Methods of Treatment Designed to Lessen the Dangers of Operation on the Stomach 748
Operative Treatment of Typhoid Perforation 749

Reports on Therapeutic Progress.

The "Turning" Effect of a Thunder-storm on Foods Susceptible to Change 750
On the Immunization Treatment of Hay-fever 750
The Formation of Film on Heated Milk 751
The Use of Suprarenal Extract in Hay-fever 751
The Real Value of Vaccination 753
Codeine in States of Melancholia 754
Dysmenorrhea 755
Possible Dangers in the Use of Lysol 756
Ear Complications of Measles and Their Treatment 757
The Examination of the Gastric Contents in Children 758
The Treatment of Acute Pleurisy with Effusion 759
Pernicious Anemias: Their Diagnosis and Treatment 760
The Use of High Heat in the Treatment of Pruritus Ani 762
Infantile Indigestion: Dietetic Management and Milk Substitutes for Children 763
Abortive Treatment of Boils 766
Treatment of Ninety-two Cases of Thermic Fever 766
The Removal of Foreign Bodies from the Eye 768
Acute Dilatation of the Stomach 768
Ascites: Surgical Treatment 768
Cauterization of the Prostate Through a Perineal Opening 769
Tumor of the Testicle: Result of Eight Operations 770
Relaxation of the Abdominal Walls under Anesthetics 770
Abdominal Inflammation and its Quiescent or Latent Period in Grave Cases 771
Retrodisplacement Treated by a New Operation 772
Nephropexy by a New Method 772
Post-mortem Six Years After Gastrojejunostomy 773
Linen Sewing-machine Thread for Ligatures and Sutures 774
Cancer of the Breast and Operation. 774
Furunculosis, Sycosis, and Acne Treated with Inoculations of a Staphylococcus Vaccine 775
Knee-joint Derangement and Operative Treatment 778
Rectal Carcinoma, and the Prolongation of Life by Colotomy 779
Continuous Baths in Surgery 779
Intestinal Obstruction by Bands 780
Congenital Factor in Hernia 781
Status Lymphaticus 782
Gastroenterostomy for Intrinsic Stenosis of the Pylorus 783
Lung Complications in Appendicitis 783
Fractures of the Upper Third of the Femur 784
Prostatic Hypertrophy: Surgical Treatment 784

Reviews 784

Correspondence.

Calomel, Acids, and Ptyalism 790
Calomel and Acids 791
Bacon Fat in Nosebleed 792
A Case of Precocious Development 792

Original Communications.

RETENTION OF URINE, AND ITS RELIEF —A CLINICAL LECTURE.

BY JOHN H. BRINTON, M.D., LL.D.,
Professor of the Practice of Surgery and of Clinical Surgery in the Jefferson Medical College.

GENTLEMEN—

Retention of urine is of frequent occurrence, not only in surgical but also in general medical practice. At times its relief is easy, and can be readily effected by the average medical practitioner. At other times it is most difficult, demanding the highest skill of a practiced surgical expert. On all occasions it should be immediate and complete. There can be no delay; the emergency must be met promptly, and the physical distress and mental anxiety of the patient must be alleviated. The public, as a rule, judge only by the result, and are apt to estimate the skill of the operator by the visible results of his first manipulations; often little allowance is made for the obstacles to catheterization, which are recognized only by the operator. Every surgeon can appreciate the gravity of such cases, and can perhaps recall painful memories of bygone experiences.

Retention of urine is now more readily overcome than it was in the past, especially since the classic utterances of Sir Henry Thompson have been heard by the profession. Prior to his time a certain vagueness characterized the writings of surgical authors. It is true that their

books abounded in suggestions, but these were general, and lacked that specific precision which alone could render them valuable to the younger or less experienced professional brother. The choice of instruments was at haphazard. Metallic catheters, soft, long, and conical English, and French olivary gum catheters, were advised somewhat indiscriminately, the preference often being based on the author's mere fancy, rather than on the necessities of the case. Little attention was drawn to the differing pathological causes of retention, and the selection of methods recommended for its conquest seemed to be governed only by a sort of "rule of thumb."

Of later years, more careful study and investigation have been directed to the male urethra, both in health and disease. The varieties and nature of the pathological changes leading to retention have been examined, and much thought has been directed to the instruments and methods for its treatment. We know now that all obstructions to the passage of urine, especially of acute retention, can be readily overcome, if only two governing factors be borne in mind. These are first the choice of suitable instruments, and secondly, an accurate appreciation of their use. This presupposes on the part of the operator a clear and definite view of the character and amount of obstruction in each case, since it is probable that the facility of catheterization is influenced by the cause of the retention, as well as by its degree.

The first English surgeon who seems clearly to have grasped the various problems of impeded urinary flow was Sir Henry Thompson, and his teachings have been largely adopted and incorporated in the works of more recent writers. Indeed, it would appear that little can be added to his precepts, at all events only some rearrangement and extension, and wider application, and yet perhaps it may not be out of place to harmonize the conclusions of individual experience and to put in words some account of the skill of those who are gone, at which in times past we as younger men may have stood astonished.

Causes of Retention of Urine.—Retention may be produced mechanically. Such cases occur usually in children, as the result of a ligature or ring placed around the penis, in a spirit of thoughtlessness or mischief, or from the insertion of some solid substance into the urethra. In older life, obstruction amounting to retention may be caused by abnormal erotic freaks. It happens also not infrequently that a small calculus in its passage downward from the bladder may become arrested and lodged somewhere in the urethra, especially at its prostatic or membranous part, and so mechanically hinder the flow of urine. All such hindrances to urination dependent on the presence of foreign substances must be gotten rid of in accordance with the ordinary rules of surgery.

These apart, there remain for consideration the three other classes of retention, so well described by Thompson:

1. Retention dependent upon *acute inflammatory engorgement* of the prostate gland. This is most often met with in young persons.

2. Retention the result of *organic stricture* of the urethra.

3. Retention the result of *senile* enlargement of the *prostate gland.* This is usually spoken of as hypertrophy of the prostate.

Retention of urine produced by *acute inflammatory engorgement* of the prostate. Attention has been strongly drawn to this affection by Thompson. According to his observations, acute inflammatory engorgement of the prostate may take place during or following an imperfectly cured gonorrhea. Its immediate exciting cause may be an excess in eating or drinking, the effect of irritating drugs, venereal excess, exposure to cold or dampness, violent or prolonged exercise, particularly on horseback. As a consequence of any of these causes, singly or combined, rapid and marked vascular congestion of the gland, especially of its lateral lobes, may take place. The prostatic urethra may thus be so compressed as greatly to interfere with the flow of urine. Complete retention may even be brought about. Rapid accumulation of urine then follows, the distended bladder projects above the pubis, rises toward the umbilicus, and may be readily felt by palpation. The sufferer often cannot void a drop of urine despite his most violent efforts. Pain is present throughout the length of the urethra, in the head of the penis, in the perineum, and in the pubic region.

The constitution sympathizes. There is fever, with flushed face and rapid pulse; drops of sweat stand on the forehead; there is intense nervousness, irritability, and disquiet. The man cannot keep still, but dances about in involuntary and spasmodic efforts to increase the capacity of his bladder by a change in position. He is utterly demoralized, and betrays his condition by his exclamations, gestures, and bearing. The bladder is full to overflowing, but has not the relief of overflow, and he thus runs the chance of atony from overstretching of the muscular fibers of the bladder. The man is in desperate straits; help must be instant and efficient, and if possible on the *first* and *single* trial. Formerly, the ordinary catheter failing, the warm bath and opiates were the resort. Great confidence was placed in the powers of nature and in medicaments to overcome all resistance, and to relax the so-called "spasm." But all this has been done away with since the advent of anesthesia, and a happier instrumentation.

Anesthesia.—Catheterization may be effected, either with or without anesthesia. If desirable, the first attempt may be made without, and unless the nervous distress is very great, perhaps this is the best course.

Catheter.—The one most applicable is some variety of a soft and flexible nature—either the elbowed catheter of Mercier, made of silk or linen or rubber, or the straight soft-rubber one, known as Nélaton's. It must be remembered that in this variety of retention the hindrance to urination is caused by compression of the urethra by the swollen and tender gland substance. The caliber of the urethra is not organically lessened, its mucous surfaces are simply pressed together. Possibly the length of the prostatic urethra may be temporarily increased and rendered tortuous by the tension of the full and rising bladder. To traverse such an obstruction, the catheter should be so soft as not to bruise the tender and swollen mass, and it should possess a flexible lower extremity, two or two and a half inches in length. The upper five-sixths of the shank or handle should be stiffer and firm.

In using such a catheter in a case of retention from inflammatory prostatic engorgement, the urethra should be first injected with olive oil, and the patient placed in a recumbent position, under the precautions suggested at length below, in the paragraph on retention from senile hypertrophy. The catheter, if a Mercier, should be pushed gently down with the projection of its beak presenting upward, until the swollen obstruction is reached, where a soft resistance, sometimes more than an inch in length, will be found. Here a certain amount of pressure, I will not say force, may be necessary to traverse this obstruction, and to reach the bladder. If the shank or body of the catheter be slightly rigid and firm, a gentle pushing motion of the operator's hand will carry on the flexible point through the prostatic urethra into the bladder. A new, fresh linen or silk Mercier catheter possesses this requisite firmness; while if it has softened from age or use it loses its stiffness. Pressure will then cause it to bend or curve in the anterior portion of the urethra to such an extent that the forward motion of its lower end may be impaired or lost. This may occur to such a degree as to convey to the surgeon a false idea of the amount or nature of the obstruction. A like effect may be found in regard to the well known soft-rubber catheter flexible throughout its entire length. Hence in all instances in which either the soft Mercier or Nélaton rubber catheter is employed, it is well to stiffen the upper five-sixths of the instrument by the insertion in its caliber of a round whalebone, as thick as a knitting-needle. These whalebones, each about two feet long, are found at ladies' trimming stores, and are used in the making of ladies' dresses; they cost about fifteen or twenty cents each, and are made of a low grade of whalebone, inferior to that used for filiform bougies. They answer well for the purpose indicated; but in their absence a filiform, although not quite so firm, can be employed for the same object. In inserting the whalebone, care should be taken that its lower end should be at least an inch and a half above the eye of the catheter, and that a thread should be wrapped transversely around it at the upper end of the catheter. This will prevent the whalebone from slipping down and projecting through the catheter eye, where it might scrape or injure the mucous membrane of the urethra.

Either the Mercier or the Nélaton catheter can be thus employed. I have, however, found the former, slightly elbowed,

the most convenient, since its projecting point passes more readily through the swollen and tender prostate. Of course in urinary instrumentation all soft instruments should be carefully cleaned and disinfected before using; when not in use, they should be kept in closed glass tubes, under formalin or other antiseptic vapor.

With the withdrawal of the accumulated urine, the distressing symptoms almost immediately abate.

The after-treatment consists in rest, the warm bath, paregoric and opium, and sleep, when the inflammatory engorgement of the prostate gradually diminishes, and passes away. A recurrence or redevelopment of this form of retention is not usual, unless the exciting cause is continued or renewed. It is seldom necessary to tie in the catheter. When the bladder has been largely overdistended for a long time, so that its muscular fibers have been greatly stretched, a temporary loss of muscular contractility or atony may ensue, giving rise anew to a loss of the power of urination. The urine may thus reaccumulate, and the patient demand fresh surgical assistance. All cases therefore of this retention should be carefully watched, and when necessary the catheter should be introduced at intervals until normal urination be reacquired. When cystitis follows, washing out the bladder, rest, and the exhibition of the usual internal remedies may be demanded.

Retention Produced by Organic Stricture.—This usually follows a gonorrhea more or less ancient, and the symptoms preceding the retention have been of gradual development; perhaps they may have extended throughout years. During this time the stream of urine has gradually diminished in diameter, it may have become forked, or spiral, or twisted, with a lessened propulsive force, and a tendency to dribble. At intervals perhaps the man has been obliged to use a catheter, and has frequently experienced pain in urination, generally referred to the seat of stricture. There has been great trouble and straining in starting the flow, and at times the urine has escaped only in drops, or in a dribbling and insignificant thready stream. In this wretched condition he may remain for a considerable period, for such a patient often seems to acquire a certain degree of tolerance. All this time the bladder walls are apt to become thickened, its cavity decreases, the urethra above the stricture may become somewhat dilated, and the upper urinary organs may sympathize.

At some time, possibly without further exciting cause, or perhaps as the result of some excess, which may be slight, in eating or drinking, or sexual irritation, or exposure to cold or damp, or unaccustomed exercise—something, in short, which has proved the last straw—retention has taken place. The urine will not pass at all, or only drop by drop at intervals, not sufficient to unload the bladder, which may be of diminished capacity. The man seeks surgical aid; he trusts to it, for he knows the necessity, and he appreciates his condition. He is not apt to be so nervous or irritable as the patient with an inflamed prostate, for he has become tolerant of suffering, and perhaps used to the introduction of the catheter. Still he is in a bad state, and all surgical efforts should be directed to relieve his local trouble without further shock. For him everything depends upon the skill and adroitness of his surgical adviser.

A great deal has been and even now is said concerning "impermeable or impassable stricture." Limiting the word "stricture" to the pathological obstruction of the urethra, the result of idiopathic cause, or gonorrhea, and excluding traumatic stricture following wounds or surgical operations, I do not believe that there is such a thing as *impermeable* or *impassable* stricture. As to the so-called impermeable variety, I believe the urine will always pass—it may be in a tiny stream or drop by drop, but still it passes; in other words, the stricture is *permeable*. In regard to the much talked of "impassable" form of stricture, I cannot admit its existence, except in the traumatic variety of stricture. With this exception, wherever and whenever the urine passes downward along the urethra, an instrument of some sort can be passed upward into the bladder, provided, however, that the exigencies of the case do not limit the time for surgical manipulation. In this form of stricture there is always a channel—it may be narrowed and contracted, but still it exists in continuity. On the other hand, in a traumatic stricture (if truly impassable) the urethra may have been lacerated or severed, and the ends of the canal superimposed or distorted and displaced. The

continuity of the canal may have been interrupted to such a degree as to forbid the passage of instruments.

In dealing then with an organic idiopathic stricture, the result of an old gonorrhea, it is well for the surgeon to start with the idea that it is passable by an instrument, and that he can pass it almost certainly on the occasion—certainly if he is not hurried, and has time. Generally, retention demands immediate relief. How can it be insured?

It has been the custom of many to attempt the passage of organic stricture with retention with a No. 8 or 10 round-pointed metallic or English soft catheter. Sometimes this will succeed, more often it will not. I do not think the use of these instruments is advisable, at all events on the very first trial of such a stricture, for this reason: If the upper orifice of the stricture is small and tight, or excentrically situated in the urethral circumference, repeated or forcible trial or pressure with a round-pointed instrument is apt to force the mucous membrane over the orifice without entering it. This minute and distorted cleft or stricture opening is so rammed or closed more tightly, and the difficulty of detecting and entering it will thus be increased.

Filiform Bougie and Tunneled Catheter.—I prefer in treating these tight strictures to adopt another method, and trust to the employment of filiforms or whalebones, over which the tunneled catheter of Gouley, of New York, is guided into the bladder. I do not, however, use the filiforms as found in the shops. As a rule, these are unsatisfactory, not being sufficiently pliable at the lower end. I either make my own filiforms, or else I render more flexible those which I buy ready-made. When I make them, I use the rounded whalebones of commerce, which can be bought by the gross* of any length, up to fifty-two inches, caliber eleven, of French (Joubert's) draw-plate. This caliber represents very nearly a diameter of one-thirty-second of an inch. Each filiform should be about thirteen inches long, of a diameter corresponding to the tunnel of the smallest Gouley catheter. The whalebone, cut to the length desired, can be thinned, provided with a fine, tapering, flexible lower extremity two and a half inches long, with olive-shaped tip, by scraping with a sharp pocket-knife. In thinning the shank and tapering lower end of the filiform the knife-blade should be drawn from above downward, to avoid the formation of splinters. If projecting splinter ends are formed, they might misdirect the metallic instrument, as it slides downward, and so lead to a division or cutting of the filiform in the depths of the urethra—an awkward accident.

The olive-shaped tip of the filiform, about one-eighth of an inch in length, may be fashioned by scraping with the knife in the opposite direction, and by then smoothing the extreme end surface by rubbing lightly with a piece of emery-paper tacked on a small piece of board.

With greatly less trouble the whalebones of the shops can be rendered almost capillary at their lower two or three inches, and sufficiently pliable, by a similar process of knife-scraping. These filiforms will thus be furnished with delicate, flexible, capillary extremities, tapering downward for two inches or more to almost the thickness of a hair, which will be found well suited to detect and enter the minute openings of the strictured canals, which so often escape detection, embarrass the surgeon, and frequently necessitate the performance of serious urethrotomies.

In treating retention, we start with the idea, *first,* that every organic stricture is due to the submucous deposit of organized lymph, at or around some portion of the urethral circumference. The lymph constitutes the stricture, while the mucous membrane is puckered or drawn in by it. *Second,* that in such a stricture there is always a channel of some sort, for the passage of urine in more or less quantity. *Third,* that the distal orifice of this narrowed channel may be situated at any portion of the urethral circumference, that it always exists, and can always be traversed by a filiform. To effect this passage with certainty, a delicate, straight, pliant, probe-pointed instrument—the filiform in fact—is most convenient. *Fourth,* if the probe point of the filiform can be made to enter the stricture orifice, it and the thicker part of the whalebone can readily be carried into the bladder, if the stricture be single. If more than one stricture be

*From George Messmann, 161 Duane St., N. Y., manufacturer of whalebone.

present, each must be attacked separately. However, clinical experience has shown that usually when the filiform has passed the lower stricture, it can be pushed through the others into the bladder.

In employing the filiform the operator should always be provided with eight or ten, and before inserting them into the urethra he should carefully examine and slide them between his thumb and finger, that he may be sure the surface of each whalebone is smooth and free from strippings or splinters. After being used, the whalebones should be carefully washed, and laid straight between the leaves of a large book, and there allowed to dry. They should then be kept in a tubular tin or cane box. With care in these little matters of detail, a dozen filiforms will endure continuous use for years.

Tunneled Silver Catheters.—In addition to his filiforms, the operator should provide himself with four or five of Dr. Gouley's tunneled silver catheters. These should range in size from No. 8 to No. 16 of the French scale, with conical points. Each one should be frequently slid up and down, on each whalebone, passed through its tunnel, to insure free motion when in active service. In the smallest size, No. 8, with a point conical to No. 6 or a little less, the tunnel should be only slightly larger than the diameter of the thickest portion of the whalebone, and the thickness of the wall of Gouley's catheter no greater than compatible with strength. The less the diameter of the tunnel and filiform, the greater perhaps may be the success of the operator.

Introduction of the Filiform Bougie.—First fill the urethra with olive oil, then pass the filiform between the fingers, to make sure that the surface is smooth, and free from projecting fibers, indicating fracture, and that the tapering lower end is straight. Then, pulling slightly on the penis, insert the point of the filiform into the meatus, and pass the instrument downward, with a slight rotatory motion, so as to prevent its point becoming engaged in any urethral follicle. When the stricture is reached, rotate the shank or upper part of the filiform between the thumb and fingers, at the same time slightly pushing it forward. Should the point enter the stricture orifice, the instrument will glide easily forward, and enter the bladder. Here its presence can be recognized by the ease with which the filiform can be moved up and down. If the point does not so engage, leave the filiform in place, and immediately pass down a second with the same maneuver, and if necessary a third and a fourth, or even more. These will probably nearly fill the urethra, stretching the canal in front of the stricture, and with probe points occupying and filling any mucous pouches or crypts. Then, in regular succession, take the shank of each filiform, rotate it, and press it slightly. If the stricture orifice be found, well and good; if not, pass to the next filiform and repeat the process patiently and gently.

If the orifice should not be soon detected, it is probably directed to the right side, away from the surgeon. Then bearing in mind that an operator instinctively and involuntarily works toward himself, let him change his position to the right side of his patient, and let him slightly withdraw, say for half an inch, the bundle of filiforms. Next, let him push forward gently and consecutively each filiform in its turn with a slight rotary motion. In all probability there is every chance, almost ninety-nine in the hundred, that one of the filiforms will engage the orifice sought. Once engaged, no force is necessary to traverse the channel of the stricture.

Little if any bleeding should accompany or follow these manipulations. If it does take place, it is evidence that some force, probably in a wrong direction, has been exerted.

As soon as the surgeon is satisfied that the filiform whalebone has entered the bladder, the attempt should be made to introduce *over* it the metallic tunneled catheter of Dr. Gouley, of New York. To accomplish this, the straight tunnel in the beak of the instrument, having been well oiled, should be threaded or slipped over the filiform, and carried gently down over the filiform, until the obstructing stricture is reached. At this stage of the proceeding it is usually directed to continue pushing and sliding the catheter *along the filiform* through the stricture. This I hold to be absolutely *wrong*. Although it may succeed in some cases, those in which the channel is not very much narrowed, yet it is always attended with risk of dividing or breaking the whalebone. This is especially apt to happen

when the stricture is tight, with an excentric anterior orifice, when the whalebone and catheter tunneled point are apt to be at an angle. When this is the case, pushing down the catheter involves the chance of cutting or breaking the whalebone by the impact of the metallic edge of the former.

This accident I have seen happen on several occasions. Therefore, instead of pushing the catheter along the whalebone, I withdraw the whalebone for half an inch, and grasp the shank of the whalebone and the distal end of the catheter between my right thumb and forefinger. Then maintaining unchanged this relative position of both instruments, I *move on both together*. The catheter point thus engages the orifice, and passes the canal of the stricture into the bladder. The problem is solved; the urine escapes through the catheter channel, and the retention is relieved. In extremely rare instances, but once or twice in a long practice, I have failed to pass the metallic catheter through the stricture. I therefore withdrew it from the urethra, but left the whalebone in place. I then found that the urine would escape along the filiform by capillary action, and so in an hour or so fully evacuate a distended bladder. In instances when from the extreme tightness or irritation of the stricture I have anticipated a recurrence of the retention, I have tied in the whalebone, first slightly withdrawing its point, to avoid irritation of the sensitive mucous membrane of the vesical triangle.

Instead of the Gouley metallic catheter, an ordinary small (No. 9 or 10 French scale) English flexible catheter with its extreme tip cut off may be substituted. For its introduction, a filiform of twice the ordinary length is required. These I make myself, the extra ten inches being necessary to support the soft catheter, as it is being passed down the urethra. The metallic catheter is, however, the more convenient. From clinical experience I have learned that following an attack of retention from stricture, a "let up," if I may use such a term, usually follows a relief by catheterization. If the patient be kept rigidly in bed, and under proper sedative treatment, a recurrence of the retention, at all events for some time, does not take place. Should all efforts fail to overcome retention from stricture, which might happen from extreme urgency, scantiness of time, and want of suitable instruments, resort can be had to suprapubic aspiration with the Dieulafoy or some equivalent apparatus.

Retention from Senile Enlargement of the Prostate (Prostatic Hypertrophy).—This occurs in advanced life, and must not be confounded with the acute inflammatory engorgement already referred to. It is of slow development, and is an enlargement or hypertrophy of the normal glandular substance and of its cellular investment. It may involve one or both of the lateral lobes of the prostate, or the third or middle lobe, often spoken of as the isthmus of the gland. Generally all portions of the prostate are simultaneously affected.

The prostatic urethra may thus be compressed from one or both sides, or it may be blocked to a greater or less degree, by the projection of the middle lobe. Then, too, these influences may be so variously combined as to distort, elongate, curve, and render the urethra tortuous. Very frequently the enlargement of the prostate upward and backward will form a decided ridge or bar at the neck of the bladder, causing behind a pouch or depression of the vesical mucous membrane. This may act as a receptacle for retained, stagnant, and decomposing urine, often giving rise to the formation of small calculi, productive of much distress. Not infrequently glandular masses, sessile or pedunculated, project backward or upward into the bladder cavity. Such conditions may exist in every degree, and their presence may be surmised from the gravity of the symptoms. Instrumental and digital rectal exploration and cystoscopy will also furnish data as to the possible pathological changes which have developed.

Symptoms of Senile Hypertrophy.—These may be briefly stated: Impeded, slow, and often frequent urination, difficulty in starting the stream, loss of propulsive force, perpendicular after-dripping, staining of clothes, urinous odor, increased amount of urine, with frequent nocturnal micturition. Urination is difficult, and often is only accomplished in extraordinary and sometimes grotesque attitudes, and with straining, which may be very great. The evacuation of the bladder is thus imperfect, and is followed

by consequent accumulation of residual urine, demanding the frequent use of the catheter. Then, too, as the bladder fills, there is often urgent and imperative call to urination; the man cannot hold his water, and there is dribbling or overflow, the so-called "incontinence." During this march of events, regular catheterization may be required, and the walls of the bladder become thickened, with diminished capacity, or thinned and dilated, with increased capacity and loss of muscular power. In either case there may be involvement of the ureters and kidneys.

In aggravated prostatic hypertrophy, the bladder often sympathizes, cystitis develops, with increased and bloody urine, accompanied by shooting pains in the penis and gland, and in the lumbar and perineal regions. Should small calculi form behind the prostate, the pains in the penis become greatly aggravated, and the patient is apt to fall into the horrible habit of involuntarily and constantly pulling the penis.

Should retention at any time occur, immediate relief is of course indicated. It must be borne in mind that the obstruction to be overcome is the pressure of the swollen lateral lobes, and the upward and often irregular projection of the isthmus of the gland. The urethra is still in place, tortuous and elongated perhaps, but not with the narrowed channel of stricture. The instrument required is for lateral enlargement with elongated or tortuous urethra, one with a soft and pliant extremity. The Nélaton catheter, so stiffened as to give a firm shank, with flexible point, will answer here. For the projection of the third lobe an upturned tip is suitable, or a soft and pliant beak. The Mercier elbowed catheter of silk, linen, or rubber possesses these qualities; and for practical purposes, if sufficiently stiff in shank, or stiffened by the insertion of a whalebone, or filiform, is well suited for catheterism in all cases of senile prostatic enlargement. It is long enough to reach the bladder, sufficiently pliant (especially if the lower end be first immersed in warm water) to follow the tortuous urethra, and its elbowed tip will easily ride over the projecting isthmus without catching or producing unnecessary pain.

In attempting catheterism for the retention of senile hypertrophy, it is well to reflect for a moment on the gravity of the case. The patient is probably old, enfeebled, and demoralized by suffering, mental disturbance, and often disquieted by the anxiety of those around him. It is most important to lessen these evil influences, to restore his mental equilibrium, and to disabuse his mind of the idea of coming pain. The surgeon must assure him that he has nothing to fear, and that he will speedily be relieved. In many instances the catheterism of an old man with retention is difficult, and it is well in attempting it to follow some fixed and convenient routine. I recall vividly the helpful words spoken to me long ago by that master in surgery, the elder Pancoast, on an occasion when sorely perplexed by a case of retention I sought his kindly help: "Much of the difficulty of catheterization can be overcome by putting your patient in a proper position, and by occupying a proper position yourself." As a formula to follow in such a case I would advise, first, to keep your patient warm during all operative proceedings; do not allow him to become chilled by unnecessary exposure to drafts of air. Let his right leg remain in the leg of his drawers, and wrap the left leg in a blanket. Cover the abdomen and body with another blanket. Place the patient flat on his back transversely across a bed, with his buttocks on the edge slightly elevated. Let each foot of his separated legs rest on the seat of a chair lower than the edge of the bed. The surgeon should stand between the man's legs, and these positions should be retained, in order that at all times the operator may preserve the middle line of the body, and so appreciate exactly the position and direction of the beak of his catheter.

Before beginning the manipulation, it is well with a penis syringe to inject into the orifice of the urethra a little olive oil. Then having slightly stretched the urethra, and keeping it in the median line, insert into the meatus the beak of the Mercier catheter, tip upward. Then taking care not to engage the tip in the lacuna magna, press down the instrument until its point can be felt at the enlarged prostate. Then firmly and gently press it onward. As the beak passes between the lateral lobes their pressure can be felt, and when it mounts over the isthmus, that also can be detected. The bladder cavity is thus reached, and the evacuation ac-

complished, a few drachms of urine being left to prevent any after shock. The soft-rubber Nélaton catheter is used in a precisely similar manner, its upper portion having been stiffened by the insertion of a whalebone or filiform. As described, the insertion of a catheter in this form of retention is not productive of much pain. If a little is caused as it enters the prostate, no stop should be made, but the instrument should be pressed gently home.

An important question now arises. Suppose the catheter introduction is difficult for the surgeon, and quite painful to the patient, the bladder being irritated, and the desire to urinate urgent, shall the instrument be tied in; or shall it be withdrawn and reintroduced as required? It must be remembered that the prostatic condition is probably chronic, although for the time being acutely aggravated, and that this general state may remain for some days. Frequent reintroduction may thus be onerous for the surgeon, and painful and wearing to the patient; perhaps it may eventually become impracticable. Under such conditions I would advise that the instrument shall be *tied in*, the point in intervals of use being always withdrawn a little from the bladder, to avoid irritating its sensitive triangle. It can then be pushed up again, when the urine has accumulated sufficiently to demand withdrawal. This I learned from the late illustrious Joseph Pancoast. In a bad case of prostatic retention, when he had succeeded where I had failed, I was about to take out the catheter. He checked me with this remark: "Always remember, in a case like this, when you have got into a good hole, you must stay there." When I asked, "How long will you leave in this catheter?" his emphatic answer was, "Until it rots, if necessary." This was many years ago. Since then I have always remembered his words and followed his counsel, and have never regretted so doing. I may say here that I have observed with many surgeons a strange antipathy to leaving a catheter in place for any length of time. To do so is regarded apparently as verging on medical sacrilege. I know, however, that it is a safe and efficient procedure. Once in a very bad case, complicated with sloughing of the urethra, I tied in a catheter for forty-nine days, during which long period the patient was comfortable and made a good if not a speedy recovery. The instrument used was a well made Nélaton rubber catheter, and when permanently taken out was undamaged. In leaving a catheter in the bladder, it is well to throw in daily with a syringe or rubber ball a small stream of some antiseptic solution. The bladder and the catheter can thus be cleansed of clots of mucus and blood, and of any earthy concretions or deposits from the urine.

The overcurved long English prostatic catheter has been strongly advised by Sir Henry Thompson. This when softened by warm water may undoubtedly be passed in many instances. It seems to me that its length is unnecessary. In my own experience I have found the Mercier and Nélaton catheters, used as described, sufficient to reach satisfactory results. I believe that in all cases the soft instruments are better fitted for introduction through an enlarged and tender prostate than any others, especially the silver catheters of large curves, once so generally employed. These were apt to bruise and irritate the tender tissues. The same objections can be made, though in a less degree, to the use of the modern vertebrated catheters. It is true that their lower ends are movable, and in many cases can be pushed along a tortuous prostatic urethra, and over a vesical bar. The passage of a metallic instrument is always, however, hard and painful, and the testimony of patients, which must be regarded as reliable, seems strongly in favor of the soft catheter, controlled by a gentle hand.

TREATMENT OF THE NERVOUS PHENOMENA IN CHRONIC NEPHRITIS.

By James M. Anders, M.D., LL.D.,

Professor of the Practice of Medicine and Clinical Medicine in the Medico-Chirurgical College of Philadelphia.

Following an early recognition of chronic Bright's disease, a carefully selected hygienic régime may at times retard or even arrest the morbid process of the disease. This statement has special reference to the removal of ascertainable causes as well as of the various aggravating conditions and agencies. The subject of the hygienic management of chronic Bright's disease, however, cannot be con-

sidered here, save only the dietary, which exerts an important influence upon the origin and course of the nervous symptoms.

In all stages of the affection a suitable diet must be formulated for individual cases, but unfortunately clinicians are not entirely unanimous as to what forms the best alimentation in cases of chronic nephritis. In the presence of marked gastric irritability, an absolute milk diet may be necessary, and also during acute exacerbations of chronic Bright's, but under all other circumstances it is not advisable to restrict the food to milk alone. In the first place, it furnishes an insufficient amount of carbohydrates to the system. It is a matter of common observation that under the influence of an exclusive milk diet in persistent albuminuria, the albumin eliminated is ofttimes increased. In my experience, an undue general weakness is prone to result from long continued restriction to milk.

A mixed diet, in which the more digestible vegetables and fecaline articles play a prominent part, is perhaps best adapted to a great majority of the cases. The effect of the diet upon the condition of the patient and also upon the urine must be carefully noted from time to time.

Another objection, and in my opinion one quite generally unappreciated, to an absolute milk diet is that the ingestion of massive quantities of fluid, by overfilling the blood-vessels, increases markedly the blood pressure, and hence, also, as a necessary result, the work of the heart—an already overburdened organ. It is entirely unnecessary to dwell on the unfavorable ulterior effects of an early overhypertrophy, or to emphasize the well known fact that oncoming secondary cardiac dilatation is a danger-signal of uremic manifestations, including the nervous phenomena. This is one way at least in which the diet of a nephritic patient may act indirectly as a cause of the nervous symptoms due to uremia. I quite appreciate the fact that I have encroached upon debatable ground, and it must be confessed that it is not definitely known how much fluid, in the form of milk or other liquid articles of food, can be ingested *per diem* without harmful effects in the manner indicated above. It is probable that in any case more than three liters of fluid would increase the blood tension to an injurious extent. *Per contra*, I desire to declare myself in favor of the use of an abundance of fluids, especially milk, within the bounds of safety to the cardiovascular system. My principal point is that the one consideration which must never be omitted is the preservation of the integrity of the cardiovascular system, particularly the heart. This organ must on no account be overlooked.

It has been pretty generally claimed that a too generous diet of solid proteids may occasion uremia. On the other hand, Hale White found experimentally that less albumin is passed in chronic nephritis upon a full diet than upon either a milk or a farinaceous diet. Contrary to the general impression, this observer found that a full diet was not more liable to lead to uremia than any other. The observations of Dujardin-Beaumetz and other investigators, however, indicate that under the influence of an exclusive animal diet, the quantity of albumin eliminated in twenty-four hours is nearly doubled. This view has been widely accepted. Chronic nephritis has been developed in a dog by exclusively nitrogenous food and absence of exercise, and according to Adami, similar conditions produce nephritis in man. It will be seen, therefore, that an appropriate dietary must exercise an important prophylactic influence as regards the nervous and other phenomena of the disease.

The treatment of existing nervous symptoms is purely symptomatic. Delirium, restlessness, nocturnal cramps, and mild muscular twitchings call for sedatives, *e.g.*, the bromides, after measures such as catharsis and profuse sweatings, aimed at the elimination of the excrementitious products, have been tried; or they may be combined with the eliminatives.

Uremia may present a grouping of features that closely simulate other brain conditions, as apoplexy, brain tumor, chronic mania, and these must be carefully excluded before adopting measures appropriate in the nervous conditions of renal origin. In acute uremia the patient is usually found to be unconscious, and also suffering from convulsions, as a rule. If general convulsions have not occurred in the given case, it is well to give a prompt aperient, as a drop or two of croton oil, mixed with a small amount of olive oil, placed far back upon the dorsum of the tongue. Free action of the sweat glands

must be obtained by the hot wet pack, supplemented by the hypodermic use of pilocarpine (one-fourth grain). The heart should be guarded by strychnine, combined with digitalis. Diuretics are indicated, but often fail us when used. Wet and dry cups applied to the loins are sometimes more effective than diuretics in securing diuresis. I have found dry cups used in this way to relieve renal congestion, and to be followed by an increased flow of urine. Quite recently I have seen a striking illustration of the efficiency of dry-cupping. These measures may promptly restore consciousness, but if not, then bloodletting from an arm-vein is justifiable and is at times effective. A general convulsion is justly regarded as the most alarming nervous symptom of uremia and it demands promptness of action. The measures before recommended with a view to bringing about rapid elimination, both vicariously and through the kidneys, are indicated and should be carried out, but while applicable during the convulsive seizure, they are not sufficiently speedy in their action to cut it short. Not a moment should be lost in resorting to the various agencies that will control or arrest the convulsions. The choice of the remedy should be governed by the patient's previous condition, more particularly the state of the arterial tension. I hold that there are few cases met with in which substantial benefits and often speedy relief is not secured by venesection. It is especially serviceable in cases in which the patient is a robust individual with a full, high tension pulse and congestion or cyanosis of the face. There is a considerable group of cases that present the indications of a comparatively feeble or even dilated heart, and correspondingly low arterial tension, although the walls of the accessible vessels may be of calcareous hardness. Now, there is no concealing the fact that in these cases it becomes a difficult problem to decide whether venesection from the arm should be practiced or not. I am so strenuous in my advocacy of general bloodletting in this condition that I would urge the adoption of an axiom, "When in doubt, bleed." The effect of free bleedings is often striking and almost instantaneous. As a rule cardiac stimulation, and that energetic stimulation, should be instituted when the pulse becomes small and feeble, as often happens after free venesection. Among heart stimulants, I give the preference to digitalis, strychnine, strophanthus, and the hypodermic injection of camphor. We often see in this, as in other diseased conditions, natural efforts directed to the elimination of the poisons of disease; they follow "the course that makes for health." Hence, it is manifestly the duty of the physician to take cognizance of these and lend assistance wherever practicable. These active natural eliminative efforts in uremia may be reinforced by the injection of the normal saline solution. Again, there is no more favorable occasion to produce this therapeutic effect than after a portion of the contaminated blood has been removed by venesection during a convulsion. The normal saline solution, which should be administered intravenously, not only promotes the activity of the emunctories and gives new vigor to the heart, but also serves to dilute and hence to weaken the force of the peculiarly potent toxic material circulating in the blood.

In this connection the question naturally emerges, "Is the administration of opium or morphine allowable in chronic nephritis?" or in other words, "Does the use of these agents aggravate the uremic manifestations in this disease?" The balance of the testimony of a trustworthy character is probably in the affirmative. It impedes the action of the vicarious channels of elimination (skin and bowels) as a rule, and also interferes ofttimes with the establishment of free diuresis. Again, the somnolence produced by morphine is readily confused with that due to uremia itself. Extended experience, however, dictates that it is less harmful in its effects in acute nephritis than in chronic, more particularly in the cirrhotic form of the disease. Indeed, it is a popular method of treatment in the uremic convulsions belonging to acute nephritis. In chronic nephritis it should be employed only—and I refer now to the more alarming symptoms—after other measures including jaborandi and venesection have failed or are contraindicated by great enfeeblement of the circulation. It should be stated here that some years ago Stephen Mackenzie recommended the use of morphine in uremic delirium, and since then not a few clinicians have employed it, claiming excellent results. Osler speaks highly of its use "in the dyspnea and

Cheyne-Stokes breathing of advanced arteriosclerosis with chronic uremia." Chloroform by inhalation is also a capital remedy in the convulsions of uremia, and yet as compared with the favorable impression made by free bleedings it plays a subordinate part. Its effects are less permanent and less pronounced, since it has not the power of removing retained waste products of metamorphosis from the body of the patient.

In bleeding a uremic patient we are wisely aping the mariner who, when he discovers that his vessel has been overburdened, because of some defect in its construction, and finding himself powerless to remedy the same, orders the removal of a certain portion of his cargo. Availing ourselves of this analogy, we may also readily see how, in the case of uremic convulsions, general bloodletting not only diminishes the required force of the human piston, the heart, but also the activity of the toxic substances in the circulating medium upon the nervous centers. Chloroform, however, is distinctly of sufficient importance as a remedy to be recognized in the treatment of uremic convulsions. It has the important advantage of being readily and quickly applied. Usually uremic convulsions speedily produce an exhausted condition of the tissues in general, and hence it cannot be too strongly pointed out that when the blood is laden with non-eliminated poisonous matters, the condition is desperate in the extreme, and all of the most powerful agencies that promote their elimination, as well as the arrest of the convulsive seizure, must be promptly although rationally employed.

Cerebral hemorrhage (apoplexy), which is dependent upon high arterial tension, is to be treated as under other circumstances. It is often preventable by unwearied attention to the vascular system, it being especially important not to permit any great increase of tension in atheromatous vessels. The best remedies to lower blood-tension are nitroglycerin in ascending doses, potassium iodide, and sodium nitrite. The latter preparation is too much neglected. Unless ill borne the potassium and sodium iodide are better adapted for prolonged use to diminish blood-pressure than nitroglycerin and sodium nitrite. To meet the indication in a sudden marked increase in the blood-tension, nitroglycerin is the remedy of choice, on account of its promptness of action.

When a hypnotic is needed, sulphonal, trional and chloralose are the best remedies and are to be preferred to the opiates. In the familiar headaches associated with renal disease, temporary relief only is possible, as a rule. The cause may be multiple. I have sometimes been able to relieve them by careful restriction or regulation of the diet. In some cases the headache is of a severe type and accompanied with much depression. It is then usually of uremic origin. The prophylactic measures recommended before must not be overlooked. Among remedies directed to the pain, phenacetine (five to ten grains) combined with caffeine (two to three grains) in capsules, every third hour until relieved, have given much satisfaction in my hands.

---

*THE ACTION OF STRYCHNINE ON THE HEART, AND THE EVIL OF OVERDOSAGE.**

By Roland G. Curtin, M.D.,
Physician to the Presbyterian Hospital of Philadelphia.

It has been my intention for some time to present a paper on the use of strychnine in cardiac conditions before this association; and last year, when Dr. Jacoby announced his intention of reviewing this subject at Niagara Falls, I arranged my material with the idea of using it in the discussion of his article. When the latter was read by title, I determined to present my views at this meeting, in order that the subject might be discussed by the members of our association. I have purposely avoided reading Dr. Jacoby's paper, that I might be better able to express my personal views without being influenced by any stand which such an eminent authority might have deemed it advisable to take.

Before entering into any discussion, I wish to state that I am not in favor of using such large doses of strychnine in advanced cardiac diseases as are often employed in America, and I believe only in this country, at the present time. I realize that I am almost alone in my opin-

*A paper read before the American Climatological Society, 1902

ion regarding the free administration of heroic doses of this drug as a heart tonic —not that I wish to deny the usefulness of rational doses of strychnine in certain conditions of cardiac weakness, but I wish to call attention more particularly to the abuse of the remedy. It would be folly to condemn unreservedly its use in tonic doses, in selected cases; or in full doses, in emergencies, such as occur in the acute infectious diseases unaccompanied by macroscopical changes in the myocardium or endocardium; or to help tide over such crises as occur in primary shock or operative shock. Clinical evidence is too familiar to all of you for me to deny its efficacy in such cases. I do, however, take issue with those, especially of the younger school, who indiscriminately give doses of one-fifth of a grain or more in the twenty-four hours; for I feel convinced that under such treatment I fail to see cases recover which formerly, under more rational treatment, were restored to greater or lesser degrees of usefulness.

Laboratory research and clinical observations have established the following physiological actions of strychnine, in so far as it affects the cardiovascular apparatus:

Physiological doses produce (1) vasomotor stimulation, resulting in a rise of blood-pressure; and (2) probably stimulate directly the heart-muscle and also its peripheral inhibitory apparatus.

Toxic doses cause (1) lowered functional activity of the motor nerve-trunks, by producing exhaustion and by directly paralytic influence; and (2) paralysis of the peripheral vagus, and depression of the heart and vasomotor system.

Professor La Housse, the learned physiologist of Belgium, from experiments on dogs, demonstrates that sulphate of strychnine, in large or small doses, causes slowing of the heart, without any preliminary acceleration, even when the heart has previously been atropinized. The drug paralyzes, from the outset, the intracardiac motor centers, and also (though only in large doses) the terminal fibers of the vagus, probably without previously exciting them. The slowing of the heart is not due, as Mayer states, to excitation of the moderating bulbar center, but in La Housse's opinion, to paralysis of the intracardiac motor centers.

The above statements are self-explanatory, and need not to be commented upon further than to say that the results vary somewhat, depending upon the size of the dose given. For instance, the primary stimulation of the vasomotor centers is soon followed by a fall of arterial pressure, caused by vasomotor palsy; and if large doses are given, an immediate fall is produced, by depression of the vasomotor centers, without their being primarily stimulated.

You will observe, also, that I have given the physiological actions of toxic doses, which are directly opposite to those that we desire to produce. I have mentioned these because of the idiosyncrasy some persons have for doses which, in others, would cause no unfavorable symptoms.

Within the past four years I have been called to see several patients, two of them physicians, who had been thrown into convulsions by such treatment. One of these physicians said: "Doctor, I think the trouble is too —— much strychnine." I thought so too; for even slight pressure on the bed caused him to jump, and whenever he attempted to talk he had a spasm of the diaphragm. I suggested, at the consultation, that the question to be decided was not what should be given, but what should be taken away; and advised giving the drug in much smaller doses. One of the consultants, an old physician, afterward told me that it was one of the most successful consultations he had ever attended.

To refer again to the physiological actions of strychnine, and to apply these facts to a given case: suppose a person to be suffering from shock. While the pathology of the condition is unknown, we realize that vasomotor paresis is one of its most apparent manifestations. Strychnine here meets the indications by quickly stimulating the cardiovascular system, but at the same time other means are employed to produce a reaction. So, in the acute infections, when the circulation is suffering from the effects of a systemic toxemia, the drug may be given with benefit until the offending toxin has been neutralized, either by natural processes or by remedial measures. On the other hand, given a heart crippled by organic disease, the dominant action of the drug—that is, vasomotor stimulation—cannot be made use of; and its direct effect upon the heart

is so slight that it seems irrational to employ it in place of such remedies as are known to act more beneficially upon the myocardium and its controlling nerves.

A short time since I read a report of some experiments to determine the action of strychnine upon muscles. One of these experiments I remember in particular. The forearm of a strong, healthy man was tested with a dynamometer, and it was found that he could squeeze a certain number of pounds and hold it for say three-quarters of a minute. He was then given strychnine up to its therapeutic limit, and tested again. This time the dynamometer suddenly registered half a pound more, but the man could not hold the instrument, for the hand immediately relaxed. This is not the character of the contraction which we desire to produce in the cardiac muscle. It increases the strength of the heart-grasp, so to speak; but the grasp does not hold long enough to fully expel the blood.

Again, strychnine may be compared, in its action, to electricity. It is a stimulant, and too much stimulation, either from strychnine or from electricity, is followed by weakness from exhaustion. In the accounts of the last six-days' pedestrian race held in New York City, in which some of the best walkers in the country were entered, mention is made of the fact that strychnine tablets were generally used as a stimulant. On Friday, a day and a half before the end of the race, the leader was one hundred miles behind the record time. This, it seems to me, is what might have been expected —exhaustion following irrational stimulation.

In observing at the bedside the action of large doses of strychnine, a few facts have impressed themselves upon my mind, particularly the quick, snappy contraction produced. It can readily be appreciated that, in forcing fluid out of an elastic bag, the latter is under much less strain from a slow, steady pressure applied to it than it would be were it given a short, quick squeeze; and the result would be a steadier stream flowing from it.

To use another simile, a horse is encouraged to pull a heavy load to the top of a hill by a sharp application of the whip. At the top of the hill, however, the animal must rest; and the driver knows that if he keeps on applying the whip and straining his horse, the animal will exhaust its strength. We can imagine a similar conditon of affairs when a heart is stimulated to the limit with large doses of strychnine; it cannot rest, but must go on.

In protesting against the abuse of strychnine, the question may properly be asked, what drugs are to be given in place of it? Experience has led me to place the most dependence upon digitalis and alcohol—digitalis, because of its remote as well as of its immediate effects (that is, it will in time, because of its beneficial action upon the cardiac muscle, tend to remove the cause of the symptoms for the relief of which the drug was primarily given); alcohol, because, in addition to its being a diffusible stimulant to the circulation, it is, I believe (many positive statements to the contrary notwithstanding), a valuable tissue-food. Strychnine fulfils neither of these important offices. It cannot be classed as a food; it will not cause the slow, full, satisfactory ventricular contraction observed after the dose of digitalis.

Besides these two drugs, dependence may be placed upon nitroglycerin, citrate of caffeine, cactus grandiflora, strophanthus, ammonia, and atropine. With these remedies, selected to meet individual cases, and combined in proper proportions, I feel sure that we can look for much more favorable results than can be obtained by giving large doses of strychnine.

While talking one day to Dr. Sansom, I asked him why it was that, although there were a number of bad heart cases in the London Hospital, none of them were getting large doses of strychnine. "Because," he said, "I consider it bad therapeutics. Strychnine, in large doses, is of no benefit to the heart, and will not assist it, when in a crippled condition, to do its work." I understand that Houchard, of Paris, who also stands high as a cardiologist, is of the same opinion.

The most important factor, however, that has led me to the conclusions which I have tried to make plain in this paper is this: Never have I seen a case of marked depression of the heart from chronic disease in an elderly person, in which large doses of strychnine were given and the patient survived. On the

other hand. I have seen many who got as nearly well as is possible in such cases under the proper administration of alcohol, digitalis, and other cardiac tonics.

*TREATMENT OF PUERPERAL ECLAMPSIA.**

By Henry Enos Tuley, A.B., M.D.,
Professor of Obstetrics in the Kentucky University, Medical Department, Louisville, Ky.

Gentlemen—It is indeed a rare opportunity for the student of medicine to see a case of puerperal eclampsia, because these cases do not often appear for treatment at the various clinics. While preparations are being made for the evacuation of the contents of the uterus, we will have time to observe some of the symptoms, especially those occurring in the so-called convulsive stage, and review the prognosis and treatment.

In the acute stage, the stage of convulsion, the patient may be conversing with some of her friends, and may be seized by a convulsion in the middle of a sentence. You will notice in this patient the convulsion begins with the voluntary muscles; there is a slight twitching of the hand, then of the facial muscles; she rolls her eyes up; the eyelids twitch violently; and she shows by the blueness of her skin the interference with the return circulation. She has now begun moving the legs, arms, and fingers, going into the violent stage of the convulsion, all the muscles of the body, both voluntary and involuntary, being involved in the process. The muscles of the pharynx and larynx are affected, and we have stertorous breathing, snoring in character, with decided evidence of interference with aeration of the blood, protruding of the tongue, with biting of this organ unless the tongue is protected, and very decided blueness of the face.

If this patient has a clonic convulsion she will have decided opisthotonos, supporting herself by the heels and back of the head, the spinal column arched forward. This occurs only in the severest cases, in which we have a long clonic stage.

The convulsive seizure is gradually ceasing, but she still breathes stertorously, the eyes are rolled back so that the whites are exposed, and are partially open; the foam in the mouth is not blood-tinged from biting the lips or tongue, as is so often the case. She has lapsed into an apparently sound sleep, which is the stage of coma, and the depth of this coma influences the prognosis. It is in part due to the chloroform which has been administered. The deeper the coma the more grave the prognosis. She is likely to regain consciousness in a short time, coming out of the coma; she will open her eyes and look around as if to see what is the matter; she will notice the anxious expression of those around her, and will perhaps ask what the trouble is; but perhaps before she has had an opportunity to speak she will go immediately into another convulsion. If she does, then the prognosis is more grave than if she had waited for some hours between convulsions. If they recur every few minutes the prognosis is necessarily more grave. Then she will perhaps go through exactly the same phenomena which took place with the convulsion you have just witnessed.

Perhaps the first symptom of a convulsion will be twitching of the hand, or drawing of the thumbs across the palms; then perhaps will begin convulsive movements of the face. The stage of coma may last for twenty minutes, half an hour, or even an hour; then the patient may regain consciousness, and there may be no recurrence of the convulsion; or there may be a short period of consciousness and then recurrence of the convulsion. The state of quiescence between convulsions is a very trying one indeed, not only to the patient herself but to those about her, because of the knowledge that recurrence of the convulsion is apt to take place at any time, and the fear as to what may happen to the patient as well as the child. We must remember in these cases that we have to deal with two lives. The life of the mother should always, in cases of puerperal eclampsia, be the one which should be thought of first. The life of the child in these cases is always considered a matter of secondary importance. Unfortunately, as a result of the eclampsia, perhaps entirely as a result of the toxemia, the child is very apt to die. The

*Clinical lecture delivered at the Kentucky University, Medical Department.

more frequent the convulsive seizures, the less apt is the child to live, so we ought not to think of the child when the life of the mother is so much at stake.

The treatment, then, resolves itself into, first, preventive treatment; secondly, treatment during the convulsion; and thirdly, the curative treatment. The preventive treatment I will refer to later.

Treatment of the Convulsive Stage.—The old axiom that meddlesome midwifery should never be practiced is very decidedly *apropos* in the treatment of eclampsia. If we are meddlesome, or if friends undertake to treat the patient and look after her, through their kindness and care, very frequently their efforts are misdirected. The patient needs such care as she can only receive at the hands of a skilled trained nurse. In eclampsia we need the services of a trained nurse more than in any other condition of pregnancy. The patient should be prevented from doing herself injury during the convulsive stage. She is apt in tossing about to throw herself out of bed; she may injure her head by striking it against the headboard. She must be prevented from doing herself violence in any way. It must be remembered that the attendants in holding her may also inflict some injury; the attendant should be careful not to exert any pressure on the abdomen in efforts at restraint. The nurse ought always to bear in mind that the patient's tongue may be protruded between the teeth and may be seriously bitten during the convulsive stage. I have seen the tongue bitten almost in two in a case of convulsions because we could not get anything between the teeth in time to prevent this. It is necessary to put something between the teeth of the patient to prevent her biting the tongue; a spoon-handle wrapped in a handkerchief or towel may be put between the teeth, preferably at the side of the mouth, and will answer the purpose. It is important that this be done, because it leaves the tongue much crippled if it is bitten. The blood which is found in the foam from the mouth often comes from the lips, which may get between the teeth and be bitten. The spoon-handle already mentioned will also prevent this accident.

We should control the convulsions, which can be done easily, by the use of chloroform. Chloroform can be given to the stage of surgical anesthesia without any detriment to the patient, and will control the convulsions. Restrain the patient from doing herself violence, and control the convulsions with chloroform.

The treatment between convulsions is one of elimination. We first begin elimination by enemata, which will probably bring away hard fecal matter which itself has proven a source of irritation from pressure. After we have given an enema and obtained evacuation, we should inject a large quantity of normal saline solution into the bowel. This has already been done in this patient. Remember that this is absorbed and acts immediately by flushing the kidneys. We also eliminate by giving purgatives by the mouth, and one of the best agents to use under these conditions is a saline—large doses of either Rochelle or Epsom salts—prepared early that it may be given the patient between the convulsions as soon as she is conscious.

The other indication is to get rid of the contents of the uterus as quickly as possible, in any manner which will do the least possible violence to the patient in its performance, and this we are prepared to do now.

As this patient was already in labor when the convulsions began, we should have no difficulty in effecting full dilatation of the cervix by the method described first by Dr. P. A. Harris, of New Jersey. Under the strictest aseptic precautions, which have been engaging my attention since the patient was brought in, she also being prepared by thorough cleansing of the vulva and the enema both high and low, I pass my hand, well anointed with sterile vaselin out of this collapsible tube, into the vagina. The cervix is found much thinned, soft, and easily admitting three fingers. The membranes are unruptured, the vertex presenting, in what I take to be the first position. My entire attention will be directed toward dilating the cervix, working the fingers in the cervix one by one, until the rim rests on the thumb and all the fingers at the second joint. In the condition in which we find this cervix dilatation should not occupy a great deal of time. Great care is taken not to rupture the bag of waters, in order to have the advantage of the liquor amnii

in case a version is decided upon after complete dilatation. The right hand being tired from the long cramped position in the vagina is withdrawn, and the left inserted. It is found now that the anterior and posterior lips of the cervix can be reached by two fingers of each hand, and in this way dilatation can be practiced in much the same way that divulsion of the sphincter ani is accomplished.

The patient is so profoundly under chloroform that the convulsion now beginning should be very slight, which you can see is the case. As the convulsions are recurring with comparative frequency, and the uterus is not contracting with sufficient force to drive the head into the pelvis, in my judgment there would be less risk to perform a version, in view of the fact that the cervix is dilated and the membranes unruptured, than to attempt a high forceps operation.

During an interval between pains, this knitting-needle, previously sterilized, is carried along my fingers now in contact with the membranes, until they are punctured; the fingers are then inserted in the rent, and the hand carried into the uterus. The hand whose palm faces the child's abdomen is inserted, a rule which is well to follow in this operation. In this case the position is L. O. A.; the child's abdomen is toward the right, hence the right hand is used. A foot is easily found, and no attempt is made to determine which one is grasped, though the anterior foot is the best one upon which to make traction. With pressure upon the head upon the outside, as you see being done here now, the version is easily accomplished. The trial is now to bring down the arms, which almost invariably ride up. This is done in this case quite easily. The back to the front, the head is brought down and is delivered with one finger in the mouth, the other hand grasping the shoulders. There is no contraindication to allowing this woman to lose a little blood, as we can in this way obtain elimination of the toxins which have been the cause of her eclampsia, especially as we have already given her a high saline enema and will repeat it. Hence we will allow some blood to flow with the birth of the placenta, and allow a slight relaxation of the uterus to occur.

She will be cleansed, a lochial pad applied, and put to bed, her uterus being held for one hour to prevent hemorrhage.

With this case fresh in your minds, I will speak of the history of these cases and their symptomatology, detailing the treatment in the different stages.

It must be said at the outset that we do not really know the determining cause of puerperal convulsions. There are numerous theories as to causation, both the liver and kidneys being held accountable. One of the theories is that coagulation of the blood itself gives rise to trouble in the kidney function; that it is due to an accumulation of urea in the blood, to the formation of carbonate of ammonia in the system, or to a sudden anemia of the brain from unknown causes. Of all the theories that have been suggested, I have but one opinion in the matter, viz., that it is a condition of toxemia—whether it is what is called an autointoxication, or whether it follows the theory of Bouchard, it is a fact that the nervous system is overwhelmed by retention in the blood of products of decomposition from some cause that ought to be thrown off.

The kidneys, being the chief excretory organs, have double duty to perform in the elimination for mother and child. There is rapid enlargement of the abdomen from the growing uterus, and necessarily there is pressure upon other abdominal organs. Indigestion often occurs, resulting in an increased quantity of gas in the bowel; more pressure will be exerted upon adjacent organs, especially the kidneys, and their function is interfered with. As a result of this pressure there is an impairment of the function, and a condition of toxemia results which acts as a cause of the convulsions. It is of the utmost importance in the incipiency of this trouble to endeavor to correct the toxemia which may exist.

Among the predisposing causes are those conditions which unduly enlarge the uterus, such as hydramnios, plural or multiple pregnancies.

The prognosis in cases of puerperal eclampsia is influenced very much by, in the first place, the time at which the convulsions occur. If we have an attack of eclampsia at the sixth month, the prognosis is much graver than if it occurs late in the pregnancy. The further advanced the pregnancy the more favorable the

prognosis. If it occurs after labor, the convulsions are apt to be much lighter in severity and much shorter in duration than if it occurs at any time previous to labor. If we have it occurring during the puerperium the convulsions are not apt to recur, and the patient is likely to make a good recovery. Then the time at which convulsions occur very largely influences the prognosis. The later in the pregnancy, or if it occurs during or after labor, it is very much more favorable in prognosis.

The death of the fetus also influences the prognosis to a certain extent. One of the treatments recommended everywhere at the present time, except by the English school, is rapid evacuation of the uterus no matter at what time during the course of the gestation the convulsions occur. The way this is supposed to act is that by getting rid of the contents of the uterus we get rid of that extra amount of excretion on the part of the mother; she then only has to excrete for herself and not for the child; we also get rid of that extra amount of metabolism which takes place in the mother's blood. If we have death of the child, and it is still retained in the uterus after this, the convulsions will probably cease, or if they do not cease altogether each successive one will be lighter in severity and the patient will likely recover. Death of the fetus, then, is another factor which should be considered in making a favorable prognosis.

If the patient goes from one convulsion into another without regaining consciousness, the prognosis is very unfavorable. Returning consciousness between convulsions is a very decided element in favor of the woman. If she, as is often the case, comes out of one convulsion, recognizes her friends, realizes from the anxiety depicted upon their countenances that something serious has happened, and begins to talk about herself, showing that she is taking some interest in her surroundings and knows what is going on—then if after that she goes into another convulsion, the prognosis in her case is much more favorable than in a patient who remains almost constantly in a condition of coma. We have always following a convulsion a period shorter or longer in duration in which there is a condition of coma, the woman having absolute loss of consciousness. If this period lasts a long time, from one convulsion to another, then the prognosis is much more grave.

If we have a rise in temperature, as almost invariably happens in cases of eclampsia, because there seems to be some decided influence upon the heat-generating center, or interference with the heat-radiating center, whatever that influence is, it has a certain bearing upon the prognosis. We nearly always have a high temperature in these cases, sometimes 104° F.—I have seen it 105° F. If we have a continuous high temperature—and we often will not be able to take the temperature except in the rectum, and even then it is necessary to watch carefully to see that the patient does not do herself injury if she is tossing about the bed—and if we find it continuously high, it is an unfavorable sign. If we have a drop in temperature the prognosis is more favorable.

If the convulsions are mild in character, then the prognosis is more favorable. If the convulsions are severe, lasting a long time, going from tonic into clonic convulsions, this stage also lasting a long time, even if the patient should come out entirely between the convulsive seizures, the prognosis is unfavorable. The lighter the convulsions, the more favorable the prognosis.

In regard to the symptoms, we have a condition which I have previously mentioned to you, and which we call the preeclamptic stage. Just as we have in epilepsy the aura in which the patient knows, if he is the subject of epilepsy, from the signs that he will have an epileptic seizure, so we have in eclampsia symptoms which, to the trained medical eye, will indicate an attack of eclampsia in almost every instance. Then after the preëclamptic stage, which I will describe in a moment, we have the stage of active convulsion, the stage of coma, with perhaps regaining consciousness, and again the stage of convulsion, should there be a recurrence.

In this preëclamptic stage we have all the symptoms which I have detailed to you under the head of the toxemias of pregnancy. The patient, ordinarily mentally active, becomes heavy, dull; perhaps there is severe headache; there may be nausea, followed by vomiting; we may have dizziness, evidences of retention in the brain

of some substance which interferes materially with the power of intellection and the power of concentration; the patient is unable to think, is dizzy, perhaps has decided vertigo with black spots before the eyes. This is soon followed by intense headache; there may be entire blindness; disturbances of vision nearly always occur, and blindness is apt to supervene; then very soon after that the patient goes into the condition of acute eclampsia. She has with this loss of appetite, a sluggish bowel, and perhaps examination will show that she has more edema of the legs than usual. She may also have suppression of urine, or a very decided diminution in the quantity of urine excreted. All or any one of these symptoms occurring in a pregnant woman ought to make you suspicious that something is the matter. Along with these symptoms the patient will usually have some swelling of the feet. If this occurs and you have not made an examination of the urine for some time, it should be done at once. A moderate swelling of the feet of pregnant women is usually manifest, apparently the result of pressure; the uterus rapidly enlarges and presses upon the recurrent vessels, and we have edema from pressure. If we have a kidney which is not doing its work properly, we will also have symptoms the same as we have from pressure, so without an examination of the urine we cannot tell whether this edema is due to pressure or to the kidney. We may have some swelling of the legs without much swelling of the face, but more frequently do we have swelling of the face associated with edema of the legs, and this should lead us to suspect that the faulty action of the kidney is the cause. Remember that we have not done our full duty to that patient without a full examination of the urine, not only examination for albumin, because that of course must be done. If we find albumin present in greater or less degree, it should place us on our guard, and we should put the patient under proper preventive treatment. We must ascertain the total quantity of urine passed in twenty-four hours, and then examine for total solids excreted, particularly urea, otherwise we have not done our full duty to the patient. We cannot get an estimate of the amount of urea without knowing the total quantity of urine passed in a given time. I mention this to show you how important it is to watch all of the symptoms which may develop in a pregnant woman. In fact, as soon as the woman comes under your observation and you are engaged for the confinement, you should tell her the dangers incident to her pregnancy, and if she is properly warned it may be sufficient to keep her from having eclampsia. She should be reminded of what the preëclamptic stage is. You should not tell her, of course, that there is a possibility of her having convulsions, but tell her that these symptoms when they occur are of the greatest importance and should be reported to the physician immediately; that they are of importance to the physician, as it will assist him in keeping her out of severe difficulties. If the patient is not made to realize that these symptoms are of medical importance, she is apt to overlook them, thinking they are simply a part of her condition, a natural part of it, especially if she happens to be a woman who has never passed through pregnancy before.

In regard to the other methods, preventive treatment, of course, can be instituted only if the physician is fully cognizant of her condition from the beginning of pregnancy. If he does not bear in mind with every pregnant woman that comes under his observation the condition known as the preëclamptic stage, then he is not competent to handle the case. He should recollect the importance of the symptoms I have detailed to you. Should they occur he should at once institute treatment for the prevention of eclampsia, and that can only be met in the first place by diet. The dietetic treatment for the prevention of eclampsia is the most important part of the treatment in my judgment. Of course, under the head of preventive treatment comes hygienic, medicinal, and dietetic, and the dietetic decidedly leads in these three. You should put the patient upon the kind of food which in the first place leaves the least residue for the bowel to carry off, which is in the most easily assimilative form, which will give the least trouble with the formation of gas, indigestion, etc. The only article of diet

which answers these requirements is milk. The patient should therefore be kept absolutely upon a milk diet; she should not be allowed to take anything else as long as there is any tendency to these symptoms in the preëclamptic stage. Not infrequently there comes up the question of the distaste of the patient for milk. There is no case, in my judgment, that cannot be put upon milk exclusively; there is no woman even with a distaste for milk that cannot take it under stress. They must take it, and can do so if it is properly insisted upon, and if they are imbued with the knowledge that it is absolutely necessary. Milk should be the absolute diet.

Most of you will recall a case mentioned to you in the early part of the session, in which there was a condition present of threatened eclampsia from kidney disease resulting from pressure. This patient was put upon a milk diet and bore it exceedingly well. She was placed upon hygienic and medicinal treatment as well. She was getting along very comfortably until she took a drive one damp afternoon, and felt a little chilled when she returned. She felt hungry and was tempted to eat more heartily of supper than usual, as she had been entirely upon a milk diet; she ate quite heartily of rice pudding, or some pudding containing rice and milk, and seasoned rather richly. She went to bed early, and very soon afterward developed headache, and became very restless. Her physician was summoned; she was then almost unconscious, relapsing very soon into total unconsciousness. She never had a convulsion, but went on from bad to worse, and finally died without ever regaining consciousness, with almost total suppression of urine. Had this patient not been so overwhelmed from the start with the poison, she unquestionably would have had convulsions, but she was so overwhelmed with the poisons which were generated from the acute indigestion as well as from the chilling she received while driving, that she never regained consciousness and died within twenty-four hours, and before delivery could be accomplished and the pressure symptoms relieved.

After we once put the patient upon a milk diet I think she should be kept upon milk absolutely, even under guard if necessary, having a trained nurse with her, varying occasionally from sweet milk to buttermilk, either one of which will sustain the patient's life amply; then we should put her in proper hygienic surroundings—a bright, cheery room, with frequent bathing, proper protection of the skin in winter, having warm woolen clothing next the skin to prevent chilling.

The medicinal treatment resolves itself into one of elimination entirely. We can best effect elimination by the kidney through flushing it with water taken by the mouth in large quantities. The patient who does not take more than two quarts of water per day is very apt to have trouble. A quart of water in the twenty-four hours does not do the work; she ought to take at least two quarts, which can be done if the water is taken as if she were taking medicine. If the patient cannot take the requisite amount of water by the mouth, if there is so much intra-abdominal pressure from the enlarged uterus and perhaps pressure from gas that the stomach will not hold that quantity of water, then we can frequently introduce water by means of the bowel, the injection of normal saline solution well up into the bowel. This is readily absorbed, and in this way we get rid of the toxic material in the blood, by means of the kidneys, which would otherwise do damage.

Another remedy which might be called our sheet-anchor in the treatment of this condition is calomel. This given in small doses over a long period of time, with perhaps a short interval of rest in between, helps materially in the treatment of this condition. I usually prescribe it in doses of one-tenth or even one-twelfth of a grain every two hours for two or three days, then rest a day or two, then resume again, which has a beneficial effect not only upon the liver, but it has a very decided effect upon the kidneys. If we have decided suppression of urine it is important for us to stimulate the kidney, and the best remedy we can use for this purpose is diuretin in ten- to twenty-grain doses every three or four hours, well diluted with water. I always instruct that the diuretin should be followed by a copious draught of water; this will have a decided effect without any serious im-

pairment of the kidney structure itself, which often occurs from other diuretics which might be administered.

To sum up the treatment of the pre-eclamptic stage—dietary, hygienic, and medicinal: The diet should be milk exclusively; none of the beef preparations or other things which throw extra work on the kidneys. Let it be remembered that the infant up to at least one year of age lives entirely upon milk; surely the adult if she takes enough milk can be sustained without any possible danger to her life from starvation. The milk diet should be continued as long as in the judgment of the physician it is necessary; we want to save the kidneys any extra work if possible. The hygienic treatment consists in frequent bathing; keeping the skin active, because we get a great deal of elimination through the skin; protection from chilling by proper clothing. The medicinal treatment is diuretics when necessary; laxatives or cathartics when indicated; high enemata if we cannot get enough water taken by the mouth; calomel, which may be given in either large or small doses; in my judgment small doses frequently repeated best meet the indications, supplemented occasionally by a saline or a dose of compound jalap powder.

The other indication is to control the convulsions. This briefly stated, for my time is about up, is by the following agents: Chloroform, veratrum viride, morphine, and chloral.

Chloroform you saw used in the case before you. It must be given almost constantly during the convulsive stage and the stage of coma. Veratrum viride has been much lauded in the past few years; it is an excellent remedy. Norwood's tincture should be given, hypodermically, twenty minims, for its effect upon the pulse; it can only be given to plethoric women with a full, bounding, and rapid pulse, and can be repeated so as to bring the pulse to 60 or even 40 per minute. Morphine should be given cautiously because of its possible effect on the excretory function of the kidney, and if possible not given at all. Chloral can be given with or without the bromides, by mouth or by rectum, the initial dose being twenty grains, and repeated in ten-grain doses in an hour.

Accouchement forcé is the treatment to be relied upon, delivering the child as rapidly and with as little damage to the mother as possible.

---

*THE TREATMENT OF CASES OF NASAL OBSTRUCTION.**

By Dudley S. Reynolds, A.M., M.D.,
Louisville, Ky.

Nasal obstructions were formerly classified as deformities of bone development, and morbid growths; the term catarrh being used to designate every form of inflammation of the Schneiderian membrane, and it is not uncommon to find in medical literature elaborate dissertations upon dry catarrh, just as if we might have dry rivers, or other dry streams of water.

Dr. Carl Michel, of Cologne, published in 1877 a Treatise on Diseases of the Nasal Cavities and Vault of the Pharynx, wherein he described hypertrophy of the nasal bones, and edema of the turbinates.

Since 1880, it may be fairly stated, the present state of knowledge concerning the nature of nasal obstructions, and their influence upon both the general health and the special senses of smell, taste, and hearing, has been developed. It is now thoroughly well understood that deformities in the bony framework of the ethmoid are often such as to permit even slight swelling in the Schneiderian membrane to block a considerable portion of the natural channels of respiration.

Children the subjects of these deformities frequently introduce foreign bodies into the nasal passages, and in some instances flies have been known to deposit their eggs in the nasal mucus. I have more than once observed maggots in the nasal passages. Chalky concretions forming rhinoliths are occasionally found. Mucocele, myxomata, fibromata, and other neoplasms are often found obstructing the nasal passages. Exostoses, sometimes of the ivory type, are occasionally found encroaching upon the orbit, or simply blocking the respiratory passages of the nose.

---

*Read before the Kentucky State Medical Society at Paducah, Ky., May, 1902.

It is notoriously true that the growth of infants is often seriously retarded by nasal obstructions. In the vault of the pharynx it frequently happens that large gelatinoid masses, commonly described as adenoid vegetations, are found. Sometimes the middle or inferior turbinate bones project abnormally into the pharynx; and in the presence of rhinitis of any form, the Eustachian orifices are closed, and the hearing is at once seriously impaired. In other cases pressure upon the recurrent laryngeal nerve may develop asthmatic breathing. Medical literature teems with illustrations of the cure of asthma by the removal of pharygeal neoplasms.

The introduction of adrenalin enables the surgeon to reduce the swelling in the mucous membrane, often in the presence of edematous rhinitis, sufficiently for the exploration with artificial light of almost the entire sinuosities of the nasal cavities. In this way differential diagnosis between abnormal bone growths, ordinary neoplasms, foreign bodies, and pharygeal growths may be easily made.

Nasal polypi were formerly removed with forceps, which often fractured and denuded large portions of the turbinates. We now pack the nasal passages, in cases of obstruction from any cause, with cotton-wool saturated with adrenalin solution; and when the swelling is reduced, we cocainize the membranes and explore the passages until we locate the foreign body, the pedicle of polypoid growths, or demonstrate the presence of abnormal bone formation, or of adenoid vegetations; and in either case, under local anesthesia, we may operate with safety.

A little more than a year ago a lady came to me in distress, with a discharging sinus situated at the superior nasal wall of the orbit. She had been to an eminent ophthalmic surgeon, who, recognizing orbital abscess, had made an opening at the side of the nose, just under the brow; and, after evacuating considerable pus, he packed the cavity with gauze, and later instructed the patient how to keep the opening in the skin patent by the regular use of a probe. Examination disclosed a myxomatous polyp hanging from the ethmoid cells. The superior turbinate body had long since disappeared from the pressure of this polyp. As the middle turbinate was well developed, its coverings being swollen, the middle and superior passages were securely blockaded. Passing a very narrow saw behind the middle turbinate, as far up as it could be carried, and turning its edge toward the septum, I was able to cut off the turbinate body, after the removal of which the polypus was exposed, and its removal easily accomplished. Following this pus was seen exuding from the ethmoid cells. A one-fourth inch bone drill was used to remove a section of the ethmoid plate, when a large amount of fetid pus escaped from both the frontal sinus and the orbital cavity. The protrusion of the eye ceased at once, and the patient quickly recovered. The old sinus with its fungoid outlet through the skin closed up in a few days, and became a deep depression. The occasional use of a saline spray for the nose is all the treatment she has required since that time.

It may be fairly stated that nearly all cases of orbital abscess arise in the nasal cavities. The habit of blowing the nose is often responsible for serious and permanent obstruction in the nasal passages, especially in those whose passages are naturally very narrow.

The presence of particles of insoluble foreign matter in contact with the Schneiderian membrane develops irritation and hyperemia, soon followed by hyperplasia and genuine hypertrophy. The conditions are now favorable for the development of polypi, or adenoid vegetations. Facial distortions, abnormal development of the nasal passages and palate, and in some instances deafness, more or less severe, follow in regular order.

It is noteworthy that persons unable to breathe freely through the nose are supplied with insufficient oxygen, and it is no wonder arrested development of the whole body follows.

It is not my purpose to present a scientific discourse on nasal obstructions, for the reason that the subject is too elaborate, varied, and important to be disposed of in a single essay.

I can recall hundreds of instances of persons suffering with stillicidium lacrimarum in whom no abnormality of the

tear passages could be discovered. Examination of the Schneiderian membrane, the site of origin of nearly all cases of obstruction in the tear passages, as well as of infectious diseases which sometimes become chronic in the tear sac, discloses an amount of swelling in the covering of the inferior turbinate bones sufficient to close the outlet of the tear duct.

I have a gentleman under treatment now in whom slight deformity of the septum and turbinate bodies makes the passages so narrow that a little irritation in the lining of the nose produces almost complete obstruction to the passage of air. Epiphora caused him to seek my aid. Careful inspection showed that a little swelling in the covering of the inferior turbinates closed the outlet of the lacrimal passages on both sides. An eminent *confrère,* on the day before, had proposed an operation for opening the tear passages. The gentleman, fearing to be severely punished by such a procedure, sought other counsel, with the result stated. A saline spray cleared out the accumulated mucoid matters, while a little terebene with menthol in liquid albolene promptly reduced the swelling, and permitted the tears to flow *per vias naturales.*

A young man, twenty-four years of age, had had an offensive discharge from the nose since boyhood. He had been the rounds of the profession. An eminent *confrère* had removed the inferior and a portion of the middle turbinate from the left side. The discharge was watery at times, and so offensive as to make him an intolerable nuisance in the household. In this condition he consulted me. Carefully spraying the passages, and packing the superior crypts with cotton-wool saturated with a solution containing desiccated adrenals, reduced the swelling so as to expose a black-looking streak in the crypt between the superior turbinate and the septum on that side. Sweeping the crypt with a blunt hook, drawn from behind forward, I engaged a very hard body, the removal of which caused very profuse hemorrhage. Placing the foreign body in a vessel of chloride of sodium solution I allowed it to remain until the following day, when careful examination showed it was composed of cotton-wool embedded in a very hard black mass. I learned subsequently that the young man had never been ill but once in his life, when at the age of ten he had typhoid fever, in the course of which he had suffered with alarming hemorrhage of the nose. Dr. C. attended him. Visiting Dr. C. I inquired if he remembered George S. He said yes, he remembered having attended the boy in an attack of typhoid fever, and that he nearly bled to death from hemorrhage of the nose. After exhausting every means of checking it, he finally resorted to the use of portions of cotton-wool dipped in Monsel's solution, with which he packed every crypt. This mass of cotton-wool and persulphate of iron had remained in the nasal passage for fourteen years. It is needless to say that antiseptic sprays brought about speedy recovery, after the removal of the cotton.

A young lady of most excellent family suffered obstruction of the nasal passages, with offensive breath, the disease having developed within the space of two weeks. It was pronounced cancer by the family physician, an opinion which had been concurred in by two consulting specialists. Careful examination disclosed such a spongy appearance of the septum, with ragged ulceration, as to arouse my suspicion, and I asked to see the skin of her neck, shoulders, and arms. Distinct syphilitic rupia was observed. Pursuing my search, I induced her to expose her shin, which was full of nodes, with several large, dark, scaly spots on the limb. Two grains of iodide of potassium in one-half pint of water every two hours cleared up the nasal passages entirely within three weeks' time, and she passed out of my hands to be treated by a specialist in skin diseases.

I might multiply the list of illustrations indefinitely, but my purpose is simply to invite the attention of the general practitioner to some of the forms of nasal obstruction requiring critical inspection only, for the discovery of the nature of them.

The Therapeutic Gazette

EDITED BY
H. A. HARE, M.D.,
GENERAL THERAPEUTICS,
AND
EDWARD MARTIN, M.D.,
SURGICAL AND GENITO-URINARY THERAPEUTICS.

SUBSCRIPTION RATES FOR 1902:
(PAYABLE IN ADVANCE.)

THERAPEUTIC GAZETTE (*postage included*).....$2 00
THERAPEUTIC GAZETTE with MEDICAL AGE..... 2 50
THERAPEUTIC GAZETTE with BULLETIN OF PHARMACY 2 50
THERAPEUTIC GAZETTE with MEDICINE..... 3 25
THERAPEUTIC GAZETTE with AGE and MEDICINE..... 4 00

Foreign subscriptions may be ordered either through our European branch, 111 Queen Victoria Street, London, E. C.; or through our agent in England, Mr. H. K. Lewis, Medical Publisher and Bookseller, 136 Gower Street, London, W. C. Price, 10s. Remittances may be made either by Postal Order or Stamp.

Price to Foreign Subscribers direct (postage included), $2.50 (10 shillings). English postage-stamps received on remittances.

Editorial communications should be addressed Northwest Corner Eighteenth and Spruce Streets, Philadelphia. Articles intended for the Original Department of the GAZETTE will be accepted only with the understanding that they are contributed to it exclusively.

Authors will receive reprints in pamphlet form, without charge, providing the request for them be written on the articles sent.

Business communications should be addressed to

WILLIAM M. WARREN, Publisher,

Box 484. DETROIT, MICH.

Leading Articles.

THE PROPHYLACTIC TREATMENT OF TYPHOID FEVER.

We have read with very great interest in the *British Medical Journal* of September 27, 1902, a most valuable paper by Major Firth and Major Horrocks of the British army upon the influence of soil, fabrics, and flies in the dissemination of enteric infection. The object of their research is well described in the title of their paper, and the experiments themselves seem to have been carried out with the greatest possible care, all collateral influences being carefully considered. Altogether thirty-six experiments were performed, and the conclusions which they reached may be summed up as follows. We use their own words to express the results which they have obtained.

"From our experiments we draw the following conclusions, which are equally applicable to enteric bacilli recently isolated from enteric stools, as to old cultures of the organism which have been in the laboratory for many months.

"1. That there is no evidence to show that the enteric bacillus, when placed in soil, displays any disposition or ability to either increase in numbers or grow upward, downward, or laterally.

"2. That the enteric bacillus can be washed through at least eighteen inches of soil by means of water, even when the soil is closely packed down and no fissures or cracks allowed to exist.

"3. That the enteric bacillus is able to assume a vegetative existence in ordinary and sewage polluted soil and survive therein for varying periods, amounting in some cases to as much as seventy-four days.

"4. That the presence or absence of organic nutritive material in the soil appears to be a largely negligible factor, since the enteric bacillus can survive in a soil indifferently well whether it be an organically polluted soil or a virgin soil, and whether it receive dilute sewage or merely rain-water.

"5. That an excess or great deficiency of moisture in soils appears to be the dominant factor affecting the chances of survival of the enteric bacillus in, or at least the possibility of recovering it from, soil.

"6. That from fine sand allowed to become dry, the enteric bacillus can be recovered on the twenty-fifth day after inoculation.

"7. That from fine sand kept moist with either rain or dilute sewage, the enteric bacillus cannot be recovered later than the twelfth day after fouling; this inability to recover the organism is due probably not so much to its death as to its being washed down into the deeper sand layers by liquids added.

"8. That in peat the enteric bacillus appears to rapidly die out, as the microbe cannot be recovered from it after the thirteenth day; but this soil is so porous that it is quite possible that the microörganism was washed down into the deeper parts and consequently not recoverable from the place of inoculation.

"9. That from ordinary soil kept damp by occasional additions of rain-water the enteric bacillus can be recovered up to and on the sixty-seventh day.

"10. That from a similar soil kept

damp by occasional additions of dilute raw sewage, the enteric bacillus is recoverable up to the fifty-third day.

"11. That from a similar soil kept damp by occasional additions of dilute sterile sewage, the enteric bacillus is recoverable up to the seventy-fourth day.

"12. That in a similar soil, after heavy rainfalls, the enteric bacillus at once disappears from the surface layers.

"13. That from a similar soil, allowed after inoculation to become so dry as to be readily blown about as dust, the enteric bacillus can be recovered up to and on the twenty-fifth day; and that enteric infective material can be readily translated from dried soil and sand by means of winds and air currents.

"14. That in a sewage-polluted soil recovered from beneath a broken drain, the enteric bacillus is able to survive up to the sixty-fifth day.

"15. That from a piece of khaki drill, inoculated with an emulsion of the enteric bacillus and then allowed to become quite dry, the microörganism is recoverable up to and on the seventy-fourth day.

"16. That from a piece of khaki serge, similarly treated, the enteric bacillus is recoverable up to and on the eighty-seventh day.

"17. That from a piece of blue serge, similarly treated, the enteric bacillus is recoverable on the seventy-eighth day.

"18. That from a piece of khaki drill fouled by liquid enteric feces and then allowed to dry, the microörganism is recoverable on the seventeenth day.

"19. That from a similar fabric fouled by solid or semi-solid enteric feces and then allowed to dry, the microörganism is recoverable up to the ninth day.

"20. That the enteric bacillus is able to survive in surface soil an exposure to 122 hours of direct sunshine, extending over a period of twenty-one consecutive days. That from a piece of infected serge the enteric bacillus is recoverable after the fabric has been exposed to fifty hours of direct sunshine spread over a period of ten days.

"21. That ordinary house flies (*Musca domestica*) can convey enteric infective matter from specific excreta or other polluted material to objects on which they may walk, rest, or feed. That such infective matter appears to be attached not only to their heads (mandibles probably) but also to their legs, wings, and bodies. It has not been proved that the enteric bacillus passes through the digestive tract of the fly."

All these conclusions possess a prophylactic value difficult to estimate, since they add much to our conception of the means by which typhoid infection is spread, and emphasize the necessity of seeing to it that all excreta of the patient are destroyed as soon as they escape from the bladder or bowel. Too frequently this immediate disinfection is not carried out, and physicians and nurses grow careless of the needs of a germicide used at the earliest possible moment.

SOME ADDITIONAL FACTS IN REGARD TO ALCOHOL.

We sometimes fear that our readers will weary of the details which we publish in regard to the important question of the value of alcohol in the treatment of disease. During the past twelve months so much valuable information has appeared in medical literature that we have felt it our duty to call attention to its bearing upon practical medicine, and our Editorial and Progress columns will be found to contain more than one abstract of articles dealing with this subject. We are desirous at the present time of calling attention to the conclusions reached by Dr. Meltzer of New York, and published in the *Boston Medical and Surgical Journal*. In the course of a symposium upon the value of alcohol, part of which we have already published, he comes to a discussion of the question of the use of alcohol in the treatment of acute infectious diseases, especially in typhoid fever and pneumonia, in which maladies, as is well known, this drug is perhaps more largely employed than in any others. After pointing out that the various experiments so far performed which indicate that alcohol diminishes vital resistance to infection are faulty, he discusses the question as to whether it exercises a stimulating influence, and quotes the well-known theories of Schmiedeberg and his school, who hold that alcohol does not stimulate anything, but always acts as a depressant. In regard to these views,

and in full appreciation of the great merit of Schmiedeberg and his learned followers, Meltzer asserts that their theory is incomplete, and that while it may be true that alcohol does not act as a stimulant in the sense that it increases the display of a normal function, it is not necessarily a fact that alcohol does not act as a stimulant to inhibitory mechanisms. Thus, as an illustration, it is pointed out that the flushing and turgescence of the skin after the use of doses of alcohol is considered by Schmiedeberg to be due to paralysis of the vasomotor center; whereas, in Meltzer's opinion, there is every reason to believe that there may be a stimulation of the vasodilators or an intermission of the tonus of the vasomotor center. In either case it is the effect of stimulation of a normal function. Other instances of this character might be cited to prove the fact that alcohol is not a depressant poison when taken in disease, and there is every reason to believe that part of the valuable function exercised by alcohol is in its influence upon the distribution of the blood, which is perverted in persons who are ill, and therefore Meltzer believes that alcohol is to be employed, first, because it stimulates the patient by effecting a favorable distribution of blood, and second, because it protects him against harmful excitation by stimulating some of the normal and inhibitory mechanism of the body.

Meltzer is also a believer in the view that alcohol is in the end a good proteid saver, just as fat and carbohydrates are such.

It seems to us that Meltzer has done well in emphasizing one view of this important question. After admitting that alcohol may exercise a narcotic effect, he asks, If it does good, why not give it? and quotes Sir Samuel Wilkes, who believed that alcohol is not a stimulant but a sedative, yet nevertheless advocated its use in typhoid fever and cited an instance in which a girl, apparently dying, received enormous quantities of brandy, rapidly rallied and shortly recovered. Wilkes says that he can see only three modes of reasoning: That the brandy did her good, the brandy did her harm, or the brandy was valueless. Certainly sufficiently large doses of brandy were used to make it exercise some influence. That it did not do her harm is evidenced by the fact that when at the point of death she rallied under its influence. That it was valueless is contradicted by the fact that she got better after using it, and therefore the only alternative left is that it did her good. Meltzer concludes his valuable paper by the following words, the most important of which are to be found in the last paragraph: "It is a noteworthy fact that among the opponents of alcohol there is not a single clinical man of note who came out unqualifiedly against the use of alcohol based simply upon unfavorable clinical results gathered at the bedside. On the contrary, clinicians ranking high in the profession and thoroughly familiar with the pharmacology of the drug are unwilling to be deprived of its aid in dealing with diseases like typhoid or pneumonia."

Curschmann, writing on typhoid in Nothnagel's Handbook, says that in spite of all theoretical objections alcohol is indispensable for the patient, and certain stages of the disease cannot be successfully treated without it. He says further that the stimulating effect of alcohol upon circulation and respiration is a fact established beyond all doubt, though it may be difficult to find its theoretical explanation. Pel, in his well-known careful address on the treatment of pneumonia, says he is well aware that the theoretical explanation of the effects of alcohol is insufficient, but the experience at the bedside has the last word in this matter, and here we gain the conviction that alcohol stimulates and strengthens the patient. Juergensen, von Jaksch, and many other celebrated clinicians express similar views.

Personally, the writer says, he is willing to be responsible for the following two statements: "Alcohol in health is often a curse; alcohol in disease is mostly a blessing."

In the *American Journal of Physiology* of October 1, 1902, Lee and Salant after experiments on frogs' muscles reach the following conclusions, which are interesting from a collateral standpoint:

1. In small quantity ethyl alcohol does not appear to exert any action on frog's muscle.

2. In medium quantity it exerts a fa-

vorable action, which is characterized by a quickening of the contraction; a quickening of the relaxation; the power of making a larger number of contractions and of performing a larger amount of work in a given time; an increase in the working time, or, in other words, a delay of fatigue; and the power of making a larger number of contractions and of doing a larger amount of work before exhaustion sets in. This action is exerted directly on the muscle protoplasm itself, not on the intramuscular nerve tissue.

3. In large quantity ethyl alcohol exerts on frog's muscle an unfavorable action, which is, in general, the reverse of that caused by medium quantities of the drug, and is characterized by a decrease in the extent of the contractions; a decrease in the working time, or, in other words, a hastening of fatigue; and the power of making a smaller number of contractions, and of doing a smaller amount of work before exhaustion sets in.

ANTITOXIN IN DIPHTHERIA.

It is by no means an uncommon thing in medical literature to find a large number of reports published in which a novel plan of treatment is highly lauded, and it is unfortunately a fact that not infrequently the lapse of time shows that these laudatory reports have been based upon insufficient experience, and that the method involved has proved in the end to be unworthy of the confidence which it has engendered. Rarely the reverse is the case. Of all the new therapeutic measures which have been devised during the last few years, none have stood the test of experience better than the employment of diphtheria antitoxin, and for this reason we read with much interest in *American Medicine* of October 4, 1902. the report of Dr. Godfrey, the resident physician at Girard College, Philadelphia, concerning the employment of diphtheritic antitoxin in that institution. Notwithstanding the fact that very large doses of antitoxin were employed in this series of cases, secondary or untoward effects from its employment were rarely met with. In two instances swelling of the knee and hip occurred; in eight an urticarial rash developed, and in one the rash was preceded by vomiting and diarrhea, the urine showing albumin and casts. It is questionable, however, whether the latter symptoms were not more the result of the disease than of the antitoxin. It is interesting to note that in all cases the initial dose was 2000 units or more, and one patient received as much as 15,000 units in twenty-six hours, while another received 20,000 in thirty-two hours. In conclusion, Godfrey points out that whereas until recently a method of combined constitutional and local treatment was used to the exclusion of antitoxin, during the last ten months antitoxin alone has been employed and the results have been unprecedented, not alone in the absence of mortality, but in the infrequency and trifling nature of the complications.

AN UNUSUAL RESULT OF THE LOCAL APPLICATION OF MERCURY.

In the editorial columns of the THERAPEUTIC GAZETTE during the last few years we have more than once called attention to the unexpected influences sometimes produced by common drugs upon susceptible persons, and in the space devoted to original articles there have appeared facts illustrating the peculiar influence which is exerted by quinine and iodide of potassium upon the nutrition of the skin in those persons who possess idiosyncrasy to these remedies. Our attention is once more called to this subject by a case which has been reported by Whitfield in the *West London Medical Journal* for July, 1902. It is, of course, a common thing for a local application of mercury to produce slight irritation of the skin amounting to a dermatitis, and if its use is persisted in, to inflammation of the sweat glands. In the particular case at issue a woman who was suffering from varicose veins of the right leg with local ulcers also complained of some irritation of the skin of the left elbow. To relieve the irritation, some diluted ammoniated mercury ointment was applied, but the next day the patient complained that her arm was worse, and the dressing was therefore removed, revealing several vesicles underneath it, and a few in the left axilla. A day or two later, vesicles also developed in the right axilla, in both

groins, in the popliteal spaces, around the umbilicus, and at various points upon the abdomen and chest. These vesicles became herpetiform in character, but under treatment speedily subsided, and recovery took place. It is interesting to note that a month later, prior to an operation upon the varicose veins of the leg, the limb was washed with a solution of biniodide of mercury, and dressed with cyanide gauze wrung out in weak carbolic solution. Four days after the operation a seropurulent discharge was observed coming through the dressing, and on its removal the whole limb was found covered with small vesicles, which in some cases had run together to form huge blebs, containing somewhat purulent serum. The wounds themselves seemed quite healthy, as they all healed by first intention.

Of course, it is possible that the carbolic acid was partially responsible for these lesions, but it is interesting to note that later on two small dressings were applied to healthy pieces of skin, one consisting of dilute nitrate of mercury, and the other of yellow oxide of mercury ointment (15 grains to the ounce), and that two days later a group of vesicles developed under the nitrate dressing, and a slight erythema beneath the yellow oxide dressing, which finally developed into vesicles. On several other occasions blue ointment was applied to the skin with similar results. As Whitfield points out, cases of skin irritation produced by the inunction of mercury are too common to be noticed. But eruptions such as those described in this paper are extremely rare, and he quotes Kaposi and Rosenthal as having reported somewhat similar instances. These cases well emphasize the fact that we have already called attention to in the articles to which we have referred, namely, that medicinal substances are capable of producing, in susceptible patients, skin lesions which may be thought to be due to disease.

METHODS OF TREATMENT DESIGNED TO LESSEN THE DANGERS OF OPERATION ON THE STOMACH.

Turck, holding that the three principal dangers incident to stomach surgery are toxemia, infection, and shock, has ingeniously devised a treatment which as far as possible safeguards against all three conditions.

Since most of the cases of stomach disease demanding operation present conditions of lowered vitality, with evidences of toxemia, he advises a preliminary treatment, which should be taken at least two weeks before operation. The patient is first accustomed to the use of the stomach tube, the stomach is then washed in clear water, followed by a pint of 1:1000 solution of silver nitrate, and after that by sterile water. In one or two days the stomach is again cleansed with soap, 1:10 solution of hydrogen peroxide, then with sterile water. Spraying with oil of cloves is highly commended. The abdominal viscera are in the meantime properly toned by lavage of the colon, small quantities of hot water frequently repeated being most beneficial.

As a means of general stimulation Turck recommends a bath with a gradually rising temperature, the temperature, after the patient is placed in the bath, running up as high as 120° F. After the skin becomes red the body is massaged with ice.

In cases of stenosis great care must be exercised in the administration of food. Rectal feeding is always in order, and the stomach is not given more than it can comfortably manage. Gelatin is especially commended as of service, and is useful in preventing postoperative hemorrhage. From one to several days before operation no food must be taken, dependence being placed upon rectal feeding, and subcutaneous injections of normal salt solution. The patient is surrounded with hot-water bottles before being taken to the operating room.

As a means of preventing shock, a small rubber bag attached to the end of a rubber double tube is introduced into the stomach as soon as the patient is under the anesthetic. Heated water from an irrigator passes into the bag within the stomach from the afferent tube, and escapes through the outlet tube, the flow and temperature of the water being regulated as desired.

During the operation, Turck applies an artificial skin over the operative field. This consists of a piece of rubber dam, which is cemented to the skin like a surgeon's rubber plaster.

As a means of preventing infection from opened viscera, the protective rubber shield offers perfect safety. This consists of a sheet of rubber dam with openings through which the portions of viscera being operated upon are drawn. The constriction exercised by these openings upon the viscera not only prevents the escape of their contents, but also effectually guards the general peritoneal cavity from infection.

Heat is applied to the viscera by means of small, thin, rubber hot-water bags, inserted into the abdominal cavity. The temperature of these bags is about 118° F. Following operation the stomach should be washed if there are signs of vomiting or other undesirable symptoms. Gastric and colonic lavage, repeated salt injections, feeding by rectum, and no food by mouth for 24 to 48 hours are in order. In case of rapid depression, the hot-water intragastric bag with the continuous flow is serviceable.

The methods suggested by Turck in the main commend themselves as of value. The particular service rendered by the intragastric hot-water bag remains to be proved. The rule, too, that patients subject to operation must receive a preparatory treatment of at least two weeks must necessarily have many exceptions. The usé, however, of the protective rubber dam and of the artificial rubber skin certainly lessens the danger of infection, which, after all, is the one complication most to be dreaded.

OPERATIVE TREATMENT OF TYPHOID PERFORATION.

The report by Hays, of Pittsburg, of seven cases of typhoid perforation operated upon by him with a recovery of three —that is, a percentage of 42.5—accentuates the already generally recognized fact that this complication of typhoid fever is amenable to surgical intervention, and that the prognosis of operation is inversely proportionate to the time which has elapsed between the period of perforation and that of abdominal section. Hays's results are considerably better than the average even when this is based upon current literature statistics, since Keen's collection of 158 cases gave a recovery percentage of 30.76. Hays's results, moreover, are encouraging because they represent all the work in this line of a single operator. It is fair to infer that the statistics based upon published cases are fallacious, because of the greater willingness on the part of the profession to publish successful cases rather than those which perish as a sequel of operation.

The need of surgical intervention in cases of typhoid perforation is more generally recognized than is the fact that this intervention can reasonably be expected to save one out of every three cases, provided it be timely. Operation would certainly be more timely if we could place implicit reliance on the symptoms and signs by which perforation is diagnosed. In many cases such symptoms exist. There is sudden agonizing pain, local tenderness, hurried pulse, temperature either subnormal or disproportionate to the pulse, and leucocytosis; followed rapidly by abdominal rigidity, pronounced tympany, and intestinal paresis. When these latter symptoms have developed, however, the time for operation is well-nigh past. There are, unfortunately, cases of perforation in which the symptoms are insidious, none of the symptoms above detailed being sufficiently marked to justify the diagnosis. Leucocytosis, at one time vaunted as a pathognomonic sign, is perhaps the least reliable of any. Sudden severe pain and tenderness may develop in the absence of perforation, though the disparity between the pulse and temperature are not likely to be noted. None the less, the number of typhoid patients who have been subjected to celiotomy for the closure of perforation which did not exist is certainly much greater than could be imagined from the literature of the subject.

Cushing emphasizes the importance of recognizing what is called the preperforative stage of typhoid, holding that this is the period for operation. This preperforative stage is characterized by severe pain, local tenderness, abdominal rigidity, and leucocytosis. If the principle of operating promptly when such preperforative signs of typhoid be noted is followed, it is probable that many unnecessary operations will be performed. The number of lives lost therefrom will, however, be much smaller than would be incident to the practice of waiting until vomiting,

constipation, a running pulse, a subnormal temperature, and a swollen, rigid, silent belly, prove beyond doubt the existence of a diffuse septic peritonitis.

Reports on Therapeutic Progress

THE "TURNING" EFFECT OF A THUNDER-STORM ON FOODS SUSCEPTIBLE TO CHANGE.

The London *Lancet* of July 5, 1902, reminds us that during serious electrical disturbances in the atmosphere it is well known that beer may become "hard," milk may go sour, and meat may frequently "turn." Considerable speculation has arisen as to the cause of this change. It has been suggested that an ozonized state of the air due to electric discharge has something to do with it, or that the formation of nitrous acid in the air is responsible for the change. It is, however, not probable that the atmosphere undergoes any chemical change sufficient to account for the extent to which certain foods "turn." Moreover, any important quantity of ozone or nitrous acid would be calculated to exert a preservative effect, as both are powerful antiseptics. It may be urged, again, that the phenomenon is due to oxidation by means of ozone, but this can hardly be the case in view of the large quantities of beer and milk that are soured in relation to the very small quantity of ozone which a thunder-storm produces. In the case of meat, at any rate, the "turning" can scarcely be attributed to the action of ozone or of oxygen. The change is probably not directly due to chemical equilibrium. It is well known that an opposite electrical state is set up by induction, so that an electrical condition of the atmosphere induces a similar condition, though opposite in character, in the objects on the earth. Persons near whom a flash of lightning passes frequently experience a severe shock by induction though no lightning touches them, and in the celebrated experiment of Galvani he showed that a skinned frog in the neighborhood of an electrical machine, although dead, exhibited convulsive movements every time a spark was drawn from the conductor.

In the case of milk "turning" or of beer "hardening," or of meat becoming tainted, it is probably, therefore, an instance of chemical convulsion, or, it may be, of a stimulus given to bacteriological agencies set up by an opposite electric condition induced by the disturbed electrical state of the atmosphere. Although these changes are most marked during a thunder-storm, yet undoubtedly they occur at other times, though not to the same degree, when there is an apparent electric disturbance. But even when the sky is clear the atmosphere may exhibit considerable electrical tension. The electroscope constantly shows that a conducting point elevated in the air is taking up a positive charge (as a rule) of electricity, the tension rising with the height of the point. This effect increases toward daybreak, until it reaches a maximum some hours after sunrise. It then diminishes until it is weakest a few hours before sunset, when again it rises and attains a second maximum value some hours after sunset, the second minimum occurring before daybreak. There are accordingly constant changes of electrical tension going on, changes, however, which are more rapid and much more marked during a thunder-storm, and which are quite powerful enough to exert an evil influence on certain articles of food or drink susceptible to change, notably meat, milk, and beer or cider. There is no doubt that the unfavorable effects on the feeling of well-being experienced by many individuals, such as headache and oppression and nervous distress, on the advent of a thunder-storm have a similar foundation and are due to the same electrical differences of potential, the effects passing away as the disturbed condition of the atmosphere or the storm subsides.

ON THE IMMUNIZATION TREATMENT OF HAY-FEVER.

In the *Journal of the American Medical Association* of June 28, 1902, INGALS deals with this most important subject and reaches the following conclusions in regard to the usefulness of employing the plants which produce hay-fever, for the purpose of immunizing the patient. As these remedies are used very little in medicine, doubt arises as to the effectiveness of the preparations employed. It is not improbable that the particular lots that

he experimented with had been in stock many years and may have lost their virtue. It would appear necessary that the plant in order to furnish an effective remedy should be gathered during the flowering season, whereas with the remedies employed it is not unlikely that but little care was taken in selecting the crude plant.

From these considerations the author was induced to urge Parke, Davis & Co. to prepare standard fluid extracts from ambrosia artemisiæfolia and goldenrod, gathered during the flowering season. This they have done, so that they may be employed next summer. In order to make the administration as easy and pleasant as possible for the patient, they have also put up the remedies in chocolate-coated tablets of the fresh extract, of two sizes; each of the smaller tablets represents 2½ minims of each of the fluid extracts. These are to be used at the beginning and while the dose is being increased; the larger tablets each represent 10 minims of each of the fluid extracts, which is the full dose that was generally employed by the author during the past year, although twice this quantity might well be tried. We have the manufacturers' assurance that the remedies will be quite as effective in this form as in any other, and therefore with the quality assured and the administration made easy, we hope to give it a more thorough trial next year, and it is hoped that each reader will lend his aid to this investigation.

THE FORMATION OF FILM ON HEATED MILK.

In the *American Journal of Physiology* for July, 1902, RETTGER describes the causation of the formation of film on heated milk. He asserts that in composition, the ordinary film on milk is almost wholly proteid and fat. That the proteid is not lactalbumin, as a number of writers have claimed, is shown by the fact that film continues to be formed almost indefinitely after each removal of the "skin" already formed; it yields a quantity, therefore, too large to consist of lactalbumin, as the percentage of the latter in milk is very small. That the proteid is probably caseinogen is shown by several facts: First, when the film is formed at a temperature under 60° C. it is soluble in lime-water. This points to a formation of soluble calcium caseinogenate. From this solution the caseinogen is again precipitated by rennin. Secondly, a pure solution of calcium caseinogenate develops a film, with or without fat; the film is likewise insoluble in water, but soluble in dilute lime solution, except when coagulated. Lastly, the amount of caseinogen in milk is comparatively large, and can readily account for the continued formation of new film after the removal of the old.

The suggestion of Osborne that the proteid in the film is free caseinogen which has been separated from its combination with the calcium, by a process of hydrolytic dissociation, is very plausible. This view is especially supported by the fact that when a pure solution of calcium caseinogenate is warmed to 40° C. the solution becomes quite opaque. On cooling, the original opalescence is again acquired. After heating above the coagulating temperature, however, the increased turbidity becomes permanent. The turbidity is in all probability due to the separation of free caseinogen, which being insoluble in water is suspended in the form of minute particles. In the production of the film, these particles are carried to the surface, and there coalesce to form the characteristic pellicle. The fat which is present naturally tends to carry these particles to the surface; but, as stated above, this process is not fundamentally dependent upon the agency of the fat.

In conclusion, the following brief summary seems appropriate:

1. The formation of film on heated milk is dependent upon proteid in the milk.
2. This proteid is caseinogen.
3. The presence of fat facilitates film formation, but is not essential.
4. While surface evaporation facilitates film production, it is not necessary.

THE USE OF SUPRARENAL EXTRACT IN HAY-FEVER.

In the *Boston Medical and Surgical Journal* of June 15, 1902, CLARK tells us that the experience of many observers now bears out Dr. Swain's conclusions, that there are no dangerous or deleterious effects to the individual from the use of the aqueous extract of

suprarenal locally, even in very considerable amounts, and that the "local effects can be reproduced in the same individual apparently any number of times without entailing any vicious habit either to the tissue or to the individual." The above statements are equally applicable to adrenalin chloride solutions of moderate strength (1:5000 to 1:10,000), and, as far as experience goes, the 1:1000 solution can also be used freely in the nose with impunity. N. L. Wilson, speaking of the adrenalin chloride solution, says "for temporary relief in hay-fever it has no equal, and is less apt to produce irritation than the solution of the suprarenal gland." In the discussion of the paper from which this quotation is made, before the American Laryngological, Rhinological, and Otological Society, H. H. Curtis said he had had eight or ten cases in which there had been an absolute intolerance of any of the preparations of the suprarenal gland. Others spoke of irritating effects, sneezing, etc., in some cases.

The author's own experience with suprarenal gland in hay-fever extends over the past two summers. The number of cases in which he has given it internally is too small, when taken alone, to support any positive conclusions. His results, as far as they go, agree with those of Somers in being absolutely negative, as far as any effect on the hay-fever symptoms could be observed. The reason that he has confined himself almost entirely to the local use of this remedy is that it seems to him the most rational one, his desire being to overcome the vasomotor paresis of the blood-vessels of the turbinates and restore their tone, as well as to diminish the hyperesthesia of the nasal mucous membrane. This could apparently be more directly accomplished by a local than by an internal use. Compare in this connection the statements of Solis-Cohen and Somers in regard to the effect of allowing the substance to dissolve on the tongue. The rationale of the local application has further support in the theory sustained already by considerable physiological and clinical evidence, that the action of the suprarenal extract is directly on the muscle fiber in the walls of the blood-vessels. The author began by using the desiccated capsules in powder form, mixed with a little water. Later, he substituted Parke, Davis & Co.'s solution of the suprarenal extract with chloretone, and this summer he used, besides this solution, the same firm's solution of adrenalin chloride (Takamine), 1:1000, usually diluted five or ten times. In regard to the relative value of these different preparations, the desiccated gland mixed with water was found much inferior as a local application to either of the other two, being, as a rule, much less active and causing more often symptoms of irritation. The effect of the 1:10,000 adrenalin chloride solution was, apparently, equal to that of the solution of suprarenal extract with chloretone. For sprays, the adrenalin chloride solutions are preferable.

Before applying the suprarenal a one-per-cent solution of cocaine was sprayed into the nose to prevent the irritation usually caused by the introduction of any foreign body into the nose. A pledget of cotton was then dipped into the suprarenal solution and laid against the turbinates in each nostril and allowed to remain there for several minutes. The immediate result of this treatment in the majority of cases was the relief of all local symptoms, lasting for a few hours to several days. As one would naturally expect, in cases in which some local pathological condition was present, such as polypi, hypertrophied turbinates, or septal spurs, it was necessary to relieve this condition before the effect of the suprarenal could be properly judged. In a fair number of this class of cases cessation of the hay-fever was obtained simply by appropriate treatment of the local abnormality. In some cases in which there was a rheumatic or uric acid diathesis (so-called), the first application of one of the preparations of suprarenal above mentioned caused a violent reaction, with swelling of the mucous membrane, sneezing, and a profuse watery discharge from the nose—in other words, a violent hay-fever attack. No such reaction followed a similar application a day or two later, but on the other hand no apparent relief followed it. The hay-fever symptoms in these cases yielded finally to the internal administration of antirheumatic remedies, together with the appropriate treatment of any local abnormality, if such was found to exist. The number of these rheumatic (?) cases observed is too small to support any positive state-

ment of a general character regarding the effect of the suprarenal on them, but it is large enough to suggest the desirability of a careful observation of more of these cases.

THE REAL VALUE OF VACCINATION.

The London *Lancet* of July 5, 1902, contains an excellent and noteworthy summary of our knowledge of this important topic. A most valuable part of the symposium is that which deals with the production of immunity by vaccination. After detailing an immense amount of facts pointing to the great value of this method, one of the articles concludes by the remark that the obvious commonsense view to take of the question of immunity is to accept the main facts, which have proved the immunizing power of vaccination beyond any doubt; to regard the exceptional cases with interest, but to wait for their explanation until we receive further enlightenment, which is more likely to come from the scientific laboratory than from clinical observation; and, in the meantime, not to distort their significance. In regard to the choice of lymph the question arises, Can glycerinated animal lymph, provided it be good of its kind, be relied upon to prove as efficient as any other kind of lymph? The answer to this question may be unhesitatingly made in the affirmative. There are, it is true, practitioners who still have their doubts about it; that is only natural, because the time since arm-to-arm vaccination has been superseded in England is not very long, and people who have always obtained good results with the old method may be expected to adopt a critical attitude toward the present innovation and regard it as still on its trial. If, however, a fair consideration be given to the results obtained from glycerinated calf-lymph both in Germany and America as well as in England, it seems impossible to escape the conclusion that this form of lymph has already passed beyond the period of probation, and fully proved itself capable of producing typical vaccinia and protecting people who are brought into immediate contact with cases of smallpox. There seems no reason to suppose that lymph from the calf may not be as good as lymph from a child nor has any objection to the use of glycerin been established which in any degree counterbalances its advantage as a purifying agent.

We may give a typical example of the sort of agitation in a small way which is got up from time to time against the use of glycerinated lymph. A number of physicians, in the United States for instance, vaccinate with glycerinated lymph and find it produces local reactions, and in some cases what appear to be vaccine vesicles. Then to their dismay they find that if the persons so treated are vaccinated a short time afterward with dry points a large number of them "take" in quite unmistakable fashion. The inference is inevitable that the glycerinated material used was ineffective, and a presumption is raised against the utility of glycerinated lymph in general. Whereupon some well known authority generally comes forward and makes clear the real nature of the difficulty. Thus, in the case alluded to, Welch and Schamberg write: "Our experience with glycerinated lymph at the Municipal Hospital has been quite different from that above quoted. It has been employed to the exclusion of all other forms of virus." They go on to show that the results obtained with it on nurses and other persons employed in the smallpox hospital completely established its thorough efficiency. Then they add, which of course gives the key to the whole mystery, that the lymph which they used was not, however, obtained from the same sources as the glycerinated lymph which other physicians found ineffective. That bad glycerinated lymph makes its appearance from time to time no one denies, and any agitation which would tend to eliminate it would serve a useful purpose; but a moment's consideration will reveal the unfairness of concluding from the badness of particular samples that the genuine article has not yet fully established its merits.

Upon the question as to what antiseptic precautions the vaccinator ought to take in performing his operation, and in the subsequent treatment of the wound, there is every variety of opinion. At the one extreme we have those who hold that the treatment ought to be conducted with all the rigidity of asepsis which characterizes an important surgical operation; at the other end of the scale are those who believe that, provided we have good

lymph and a clean instrument, we need not trouble about any danger of extraneous contamination; and then there is a large intermediary class who find contentment in the elasticity of the phrase "with all precautions possible."

Ideally speaking, the routine would be —make the inoculation site absolutely sterile; remove all traces of disinfectant with sterilized water or absolute alcohol; apply aseptic dressings after the operation so as to exclude the entrance of extraneous organisms; and in the stage of discharge keep the dressing clean by constant renewal.

It is not part of the purpose of the present article to consider how many vaccinators actually adhere to such rules as these, or how far others may deviate from them. They are better entitled to speak for themselves on that matter. But there are certain possible difficulties which may be pointed out as apparently standing in the way of strict asepsis. There is, in the first place, the question of time. The waiting-room may be crowded with patients waiting to be vaccinated, and the operator may know that he ought to work at the rate of about thirty an hour in order to get through his daily task. In such a case, unless he has several attendants to do the cleansing for him, it must be very difficult to adhere to the principles of strict aseptic surgery. Again, his subsequent inspection of the patient will probably be limited to a single visit a week later, which seems hardly enough to satisfy the requirements of the aseptic theory of treatment. Supposing the arm to be really sterile at the time of inoculation, a clean dressing carefully applied ought to be a satisfactory protection for some days. But if there are numerous bacteria left at the site of inoculation, the additional warmth of the protective covering applied will probably only tend to foster their growth. Again, in the stage of discharge, if the dressing as soon as it becomes soaked is replaced by a clean one, well and good; but if it is left on until it becomes purulent and filthy, it will simply degenerate into a bacterial hotbed, and, as by this time it has probably worked loose, bacteria from outside will make their way in, and will find in this unpleasant mess greater facility for luxuriant growth than if the wound were unprotected. It must thus be a very difficult task for the vaccinator who insists on the importance of thorough asepsis always to carry out his treatment to his own satisfaction.

With regard to the view that cleansing of the arm and protective dressings are unnecessary, the practical consequences of disregarding such precautions will probably vary with the class of patients dealt with. With a patient of thoroughly cleanly habits the chances of any harm resulting are, no doubt, very slight indeed, but with a careless subject, and still more with a person engaged in a dirty or dusty occupation, the risk is certainly appreciable.

The intermediate principle of taking "all precautions possible" may perhaps be interpreted as meaning that the methods adopted must be adjusted to the condition of the patient. Thus we may imagine that the amount of cleansing performed will vary according to circumstances, from the application of warm water merely to soap and water, alcohol, carbolic acid, and finally to thorough surgical sterilization, and that, though protective dressings will be applied or ordered when thought desirable, they will not, as a matter of routine, be sealed down with strapping, with strict injunctions that, filthy or not filthy, the patient must on no account disturb them for a week.

From a survey of the possible contingencies we have mentioned, it appears to follow that in the general question of vaccination asepsis there is great scope for individuality of judgment.

CODEINE IN STATES OF MELANCHOLIA.

JULES CLAUSSE (*Thèse de Paris,* 1902) mentions certain classes of mental and nervous agitation which appear to be particularly benefited by codeine. Codeine phosphate was the substance used with especially good results in melancholia with acute feelings of misery, epigastric pains, shallow respiration, feeble secretions, and general bodily depression. Careful observations were made of its effect on fifteen patients, namely, five males, and four single and six married women. The ages of the patients varied from nineteen to seventy-six years, the following being a few selected cases: Woman, aged seventy-six years, senile melancholia with insomnia, much improved; man, aged

thirty-two years, melancholia with self-accusations, great improvement; man, aged twenty-six years, melancholia with delusions of persecution, greatly improved; single woman, aged twenty-nine years, with delusions of persecution, hallucinations of sight and hearing, and hysteria, no effect; man, aged twenty-one years, hebephrenia (exaltation and mental confusion) with sexual excitement, no improvement. From careful analysis of the cases and results the following conclusions are drawn: (1) Marked improvement follows the treatment with codeine phosphate when there is melancholia with anguish and great moral suffering (*douleur morale*), and corresponding disturbance of general sensibility; (2) such patients were rendered bright, cheerful, and happy, and sleep was obtained; (3) the action of codeine on the bowels was not nearly so constipating as opium or morphine, while the respirations were increased in depth; (4) the dose of the codeine phosphate was four to six centigrammes hypodermically, or six to eight by the mouth (excessive doses produced headache, nausea, vertigo, tachycardia, and myosis of the pupils); (5) the drug was contraindicated in all cases of intense excitement, including simple mania, as it increased such disorders.—*British Medical Journal*, June 21, 1902.

DYSMENORRHEA.

WILLIAMS in the *Philadelphia Medical Journal* of June 28, 1902, advises the following plan of treatment for the relief of this condition. He thinks in regard to treatment the patient's general condition should receive its full share, as the author has observed that the menstrual suffering, if not entirely cured, has at least been much lessened by the building up of a generally run-down system.

Should she be anemic, iron, cod-liver oil, and the syrup of hypophosphites seem to act very satisfactorily. Basham's mixture and Blaud's pills are two of the best iron preparations; the latter in five-grain pills, with one-tenth grain extract of nux vomica, three to six daily, is one usually to be relied on.

The salicylates and quinine seem at times to act beneficially, but to what extent the author is unable to say, as the relief from pain was as great in those women who had not rheumatic or malarial diathesis as in those who had.

The bowels should be carefully looked after, the salines perhaps acting better, as they seem to relieve the congestion which is present quicker than any other laxatives. A good but not elegant formula is the following saline mixture:

> Iron sulphate, 12 grains;
> Magnesia sulphate, 1 ounce;
> Sulphuric acid, 12 minims;
> Infusion of gentian, q. s. ad 6 ounces.

This may be given for months, if necessary, with no deleterious effects, and is not followed by constipation on its withdrawal.

One important part of the treatment is rest—that is, rest in bed, one, two, or three days previous to the expected flow, also during this time; this of itself will at times lessen materially the suffering.

Vaginal injections of hot water, 100° to 110° F., used twice daily up to the day previous to the expected flow and recommenced a few days after the flow has ceased, will be found of the greatest benefit; the failure in some cases to procure any relief from hot douches, and this applies to all vaginal injections, no matter what the indication may be, is due to the women not knowing how to use them properly. They should always use a bulb syringe with a nozzle made of horn or some other non-conductor of heat, although a metal tip may be covered with a piece of India-rubber tubing, and inject at least two to four quarts with or without medication.

These injections should invariably be taken while lying down; this is awkward for a woman to do herself, and is one reason why they sit over a basin or commode, and why many are not benefited by douches. They should always be given by some one other than the patient. A fountain syringe does little more than bathe the vagina in a puddle of warm water, especially if the patient is upright, and what we want most is relief of the congestion in the pelvic vessels, which is procured much more quickly by the impulse of the jet of water from a bulb syringe like the Davidson, which excites the vessels to contraction. At times women will complain of weight and discomfort in the pelvis after these douches; in

these cases, by reducing the temperature of the water to about 95° F. they can be well borne.

When there is much congestion present in the pelvis, and whenever we find tenderness, the application of iodine, first removing the mucus by means of forceps dressed in cotton, followed by the introduction of a glycerin tampon, will be of benefit.

These applications should be made twice weekly, so long as marked tenderness exists, as ascertained by the finger.

The bromides will help many cases, used between the periods in small doses and then increased two or three days previous to the flow. The author offers no explanation for it, but these women seem especially prone to bromide acne; perhaps it may be the poor blood condition which is often present in such cases.

In patients in whom there is intense suffering with scanty or suppressed flow, usually seen in young girls, the same treatment may be used as in aborting a coryza. Morphine should not be used unless absolutely necessary, and then only hypodermically, and should always be given by a physician.

The acceptance of this theory will demonstrate at once, when general treatment fails, that the proper procedure is a dilatation of the cervical canal, one in which the internal os is not only stretched, but some of its circular fibers torn; a procedure much like that carried out for fissures of the anus, and it may be just possible that a fissure may exist at the internal os uteri in some of these women suffering from dysmenorrhea.

It is natural to suppose that the benefits derived are brought about by relief of spasm, at the internal os, which allows a free escape of blood, thereby preventing clot formation, which lessens uterine contractions. Those who claim it is the straightening of a flexure or the enlargement of the external os which helps these women, overlook the fact that the flexure is reproduced almost immediately on withdrawing the dilator, and that many women with pin-hole os do not have the slightest pain while menstruating.

The author does not wish it to be understood that he advises dilatation in all cases of dysmenorrhea, but the gratifying results obtained in selected cases make it a procedure of much value. By selected cases he means those in which there is no acute tubal or ovarian disease, chronic pelvic trouble, in which we find much tenderness on vaginal examination, or a lacerated cervix.

The failure to procure relief after dilatation is, in many cases, due to the fact that the dilatation is not carried far enough. In virgins and in those cases of rigid pin-hole os, it should be at least three-quarters of an inch, and in parous women one to one and a quarter inches. This may seem extreme to some, yet the author's experience and the results obtained by others have convinced him of its safety and efficiency.

If the dilatation is done under an anesthetic, extra care as to cleanliness may be taken. The operation may be done gradually, taking ten to fifteen minutes to reach this dilatation, using only the pressure of one hand. The dilator may be allowed to remain in the canal ten or fifteen minutes or longer, so that there need be little fear of harm, although at times shock will follow even the slightest dilatation of a stenosed uterine canal.

The best time for dilatation is about one week after a menstrual period, the woman remaining in bed at least five days, or, should there be pelvic pain, until this has subsided.

POSSIBLE DANGERS IN THE USE OF LYSOL.

Linck (Arbeiten aus dem pathol. anat. Inst. in Posen, 1901) has made a series of experiments on rabbits with a view to determining accurately the toxicity of lysol. He thinks the subject deserving of attention, because, in spite of its supposed non-poisonous character, a few cases occur every year where lysol has been found to produce symptoms of poisoning and even death, either when applied externally, used to irrigate the bowel or wash out the uterus, or taken inadvertently by the mouth. Details are given of a case occurring in Posen in which 50 cubic centimeters of undiluted lysol was accidentally included in an enema. Unconsciousness followed, with stertorous breathing, feeble pulse, loss of reflexes, and rigidity of the extremities. Death occurred the same day.

Introducing lysol into the large intestine of rabbits, Dr. Linck found that a dose of 0.224 cubic centimeter per kilo of body weight produced slight clonic convulsions, which were intensified by larger doses; 0.566 cubic centimeter produced unconsciousness; and 1 cubic centimeter death. The symptoms depended on the total dose, and did not vary with differences in its concentration. Erosions more or less extensive were found in the intestinal mucosa. When the lysol was introduced into the stomach the same effects were produced, but a larger dose was required; 1.16 cubic centimeters per kilo failed to produce any toxic symptoms, and 1.8 cubic centimeters was the minimum necessary for a fatal result. Comparing the post-mortem appearances found in the patient who died after administration of the enema with those produced in the rabbits experimented upon, it was found that there was a correspondence in the intestinal lesion.—*British Medical Journal*, June, 1902.

EAR COMPLICATIONS OF MEASLES AND THEIR TREATMENT.

JARECKY advises in the *Medical Record* of July 19, 1902, the following plans of treatment:

From pain in adults relief is often found by abstraction of blood, by applying a natural or artificial leech over the tragus. A hypodermic injection of morphine will often cut short the attack. Occasionally the author has had results from phenacetine 5 to 10 grains, or acetanilid 2 to 4 grains, every two or three hours. The local watery solutions of morphine, cocaine, and atropine have never been satisfactory. Oils are only mentioned to be condemned. Glycerin, with 5 to 10 per cent of carbonic acid, applied on cotton to the drum membrane, and allowed to remain from six to twenty-four hours, often cures the pain. This can be repeated if necessary. Dry heat is very effective at times. Moist heat causes edema of the tissues and should not be used. Frequent irrigation with hot water from a fountain syringe, placed about one foot over the head, using about a half to one pint of water, is often efficacious. The nose should be kept clear by irrigation or swabbing, and a gargle used to dispel any mucus from the throat. The bowels should be carefully looked after.

If the attack is not aborted, the hyperemia increases, and the membrane loses its luster, causing a general swelling and bulging. This should not be allowed to perforate spontaneously, as the rupture is jagged, and causes irregular cicatrices, and takes a much longer time in healing than when incised, and the prognosis as to the future hearing is worse. Only in extremely few cases do we see good results after rupture.

When bulging exists paracentesis should be at once performed. For this operation the canal should be cleansed: either irrigated with bichloride solution 1 to 5000, or else mopped out with peroxide of hydrogen. Then with a good light the knife should pass through the bulging portion, or from the point behind or below the stapes to the lower border of the membrane close to its bony attachment, by a curved incision—that is, the posterior inferior segment. The knife the author prefers is a straight one, but one at an angle may be used; it must be exceedingly sharp, and should pass through the membrane by its own weight, incising at the same time the mucous membrane of the internal tympanic walls to secure thorough depletion. If the membrane has ruptured spontaneously, the opening should be inspected to see that there is sufficient drainage; if not, a free incision should be made. For local anesthesia, the author has found cocaine to be of little value. Aniline oil and cocaine have given toxic symptoms. The mixing of equal parts of menthol, carbolic acid, and alcohol has only been occasionally satisfactory. In adults he invariably uses nitrous oxide, and in children chloroform or ether. Infants can be held firmly and operated upon.

After the operation he irrigates, packs the canal lightly with sterilized gauze, puts a pad of cotton over the ear, and retains all with a bandage which he leaves undisturbed for twenty-four hours, directing the patient to lie on the side affected to facilitate drainage. If there is much discharge at the time of incision he orders douching.

When the gauze is removed he orders irrigation, according to the amount of discharge. Some cases heal up in a few days.

The discharge, which is usually at first serous, later often becomes purulent and profuse. The cleansing may be needed every two or three hours. Saturated solution of boric acid, bichloride 1 to 5000 or 10,000, or sterilized water, may be used. As the discharge diminishes the cleansing should be reduced in frequency.

A second method of treating these cases, when they can be watched closely, is to dry the middle ear with cotton, introducing strips of gauze daily for drainage, and a pledget of cotton is put in the external ear.

A third method is to clean out the ear with a syringe, then use peroxide of hydrogen, and finish by syringing again. The ear is mopped out or dried with repeated instillations of alcohol, diluted, if painful in its full strength. When painful symptoms stop, inflation either with Eustachian catheter or Politzer bag helps to get rid of the pus, and to prevent adhesions.

The use of powders, as boracic acid, iodoform, dermatol, etc., is excellent when the discharge is slight. Then after cleansing an insufflator should be used, care being taken not to block up the perforations. These may remain in until moistened by the discharge.

If the condition becomes of a chronic nature, various astringent applications can be used, either applied with a swab or in the form of drops. Inflation should be employed, granulations should be cauterized, and polypi snared.

If symptoms point to mastoid involvement, he orders frequent irrigations of the canal, Leiter's coil or ice-bags over the mastoid continually for twenty-four hours, and rest in bed, light diet, and cathartics.

There must be free drainage from the tympanum at the same time. If the membrane is incised, it is always wise to incise the posterior superior canal wall for one-fourth inch down to the bone.

The author gives no opiates to disguise symptoms; when pain still continues he operates. If pain ceases, he stops the coil or ice-bag for twelve hours, then reapplies for twelve hours, and judges result.

He employs no leeching over mastoid, as it prevents proper examination for tenderness. The brain and sinus complications, with the description of mastoid operations, time did not permit him to touch upon.

There is no doubt, if in the early stages the drum membrane is watched and incised promptly, many of the later complications could be avoided. The incision of the membrane is simple, and has been the means of saving many ears from becoming defective.

In conclusion the writer impresses the importance of having the nose and throat looked after in all children, and advising an early incision of the drum membrane, if needed, or if in doubt.

THE EXAMINATION OF THE GASTRIC CONTENTS IN CHILDREN.

In a long article on this topic in the *Medical News* of July 5, 1902, FISCHER concludes from the study of a series of cases that the following points may be submitted as worthv of note:

1. In atrophic children and in subacute dyspeptic conditions HCl will not be found. The organic acids, lactic and butyric, were present. Sometimes acetic acid was also found. There was acidity in all anemic conditions, also in that form of disease resulting from malassimilation, known as athrepsia infantum. The motility of the stomach was found to be greatly reduced when such test could be applied. The salol test was delayed for several hours in some instances. It might be of interest to note that salol was frequently given in the treatment of febrile conditions, and in this manner its effect could be noted.

2. In very young infants, especially in healthy nurslings, there is an excess of lactic acid at the commencement of digestion after the sixth month and until the end of the first year. Free hydrochloric acid can be found at the end of the digestive process in the same proportion as it is found in adults. In healthy children over one year we find free hydrochloric acid in one to one and a half hours after feeding. Most specimens of chyle examined were produced at least one and a half hours after feeding. Some specimens were procured two hours after feeding, and still other specimens two and a half hours after feeding.

3. At the beginning of the digestive process, lactic acid predominates; at the end of digestion, hydrochloric acid is in

excess. There is a constant antagonism between the lactic and hydrochloric acids. When gastroenteric disorder existed, in which both stomach and intestines participated, free hydrochloric acid could not be found.

4. The gastric contents of children fed on raw milk warmed to normal blood temperature, or about 100° F., always showed a better state of digestion than did those of children fed on milk which had previously been subjected to superheating.

5. Cheesy curd so frequently found in hard, rubbery lumps two and three hours after a meal of sterilized milk was invariably found more flocculent and less thick when raw milk was fed in place of the sterilized milk.

6. Constipation, which invariably existed when superheated milk was used, always disappeared without medicinal treatment when the milk was subjected to less heating and fed in a manner that corresponds to what nature teaches us.

7. Breast-milk has a temperature of about 100° F., and cow's milk should never be fed at any other temperature. The more mechanical manipulation milk is subjected to, the greater will be the risk of exposing the same to contamination. Rather than do good thereby, we do positive harm.

8. Careful study of babies fed exclusively on sterilized milk will show systemic defects and subnormal tendencies to infection; their bony structures will be found to be deficient; spinal disease and deformities can be traced to deficient nutrition, which was destroyed by superheating milk while sterilizing and Pasteurizing the same.

THE TREATMENT OF ACUTE PLEURISY WITH EFFUSION.

The *Clinical Journal* of July 9, 1902, contains an article by HECTOR MACKENZIE in which he advises in cases of moderate effusion the absorption of the fluid by the application of the iodine tincture or solution over the back and front of the affected side of the chest. Some recommend diuretics and hydragogue purgatives in the cases of pleurisy with effusion, in the hope of assisting the absorption of the fluid; but such remedies are, as a rule, distinctly harmful, although useful enough where there is a passive effusion, the result of a failing heart. The treatment of pleurisy with effusion should be sustaining, not depleting. The ordinary drugs which one finds useful in pulmonary tuberculosis may be given in cases of pleurisy, such as creosote and guaiacol, or their carbonates or valerianates. A recent guaiacol derivative, thiocol, has the advantage over the others of being freely soluble and practically tasteless. Some who are impressed with the rheumatic origin of pleurisy give salicylate of soda, but there ought to be clear evidence of rheumatism before we adopt that line of treatment.

The next point is the question of aspiration. The author does not believe in aspirating every case of pleurisy with effusion. He thinks aspiration should be done, first, when we are in doubt as to the nature of the fluid, and secondly, where effusion is large or causing serious discomfort to the patient. If the amount of fluid be large or the patient's breathing be embarrassed, the author advises aspiration. But if the amount of the fluid be moderate only aspirate where we are in doubt as to its nature, or where the patient is not getting on satisfactorily. He reminds us how important it is to have our trocar and cannula perfectly aseptic, and to render the patient's skin free from microörganisms at the site of exploration. We should bear in mind, however, that aspiration or even exploration with the needle is not altogether free from danger, and although such a catastrophe is very rare, death occurring during or soon after this seemingly safe and simple operation has been recorded in a number of cases. Some years ago one of the author's colleagues had a sad experience of this kind, a patient of his dying very shortly after exploratory puncture made in the out-patient room. It was suspected that there was an encysted collection of fluid at the left base, and two punctures were made; but the first was dry, and only a little blood was removed by the second. Suddenly the patient passed a large quantity of urine, turned pale, and fell backward. Respiration ceased, and the heart beat rapidly and irregularly. Artificial respiration was maintained for half an hour. The unfortunate patient survived for three days, during which time he remained unconscious and had

several convulsions. A post-mortem examination was made, but there was nothing found to explain the fatal termination. A similar case occurred at St. Thomas's Hospital, the patient being a child of seven. In another case, also at St. Thomas's, a child of eight suddenly died from syncope during exploratory puncture of lung. The author remarks that Dr. A. E. Russell, in a recent paper on the subject, thinks that the sudden syncopal symptoms are due to afferent impulses conveyed along the vagus nerve to the medulla, and attributes the unconsciousness and convulsions to cerebral anemia, brought about by the extreme lowering of the blood-pressure. Therefore we should never make an exploratory puncture in the consulting-room. When exploring or aspirating let the patient be in the recumbent position, and always take care to have stimulants at hand, and be ready with the hypodermic syringe to inject strychnine should there be any signs of cardiac failure. Should syncope occur, resort at once to artificial respiration. Another complication which has sometimes been observed to follow aspiration is pulmonary edema, shown by the expectoration of large quantities of albuminous fluid, which occurs usually about an hour after the operation.

If fluid is found to be present, the next question is, how much should be withdrawn? If the fluid be of the ordinary serofibrinous character we should not withdraw the whole quantity that it is possible to remove. If a portion is withdrawn nature apparently is able to deal with the remainder, which is gradually absorbed. If the whole fluid is withdrawn it sometimes rapidly reaccumulates; and we must also bear in mind that the effusion to some extent serves a useful purpose by separating the inflamed surfaces of the pleura and so relieving pain. Then there is the question of repeating paracentesis. If the fluid reaccumulates to its former amount and the patient be not getting on satisfactorily, we should not hesitate to aspirate again, but not be in too great a hurry to do so. Sometimes paracentesis has to be repeated two or three times before the patient makes a good recovery, but recovery nearly always does take place. If it is found that after a time a certain residual amount of fluid is there, then graduated exercises sometimes are helpful in removing it, such exercises being employed as expanding the lungs and bringing into use the various muscles of respiration.

With regard to the after-treatment, that is the most important of all. The onus rests with the physician not to prove that the disease has been tuberculous, but to convince himself that it is not. Unless we can do this we must look upon it as having been a tuberculous affection, and insist that the patient after recovery from the pleurisy should get a thorough and complete change. Send him away into the country so that he may lead a healthy open-air life for a period of three months. In certain cases, if he has made a complete recovery, a sea voyage may be very beneficial. Examine the patient from time to time, and be thoroughly satisfied that his health is reëstablished.

There is another matter which the author refers to before concluding, and that is the question of testing the patient with tuberculin. In all cases where we are doubtful of the tuberculous nature of the illness he advises that the test should be applied for prognostic and diagnostic purposes during the stage of convalescence. He is of opinion that it will strengthen our hands and be of great benefit to the patient to make the test after recovery from pleurisy. If we find that the patient reacts to tuberculin, we can be much more emphatic in ordering the rest and change which the author thinks essential; while if after the test has been thoroughly and systematically applied no reaction is obtained, we can give a more hopeful prognosis than we would otherwise be entitled to do.

PERNICIOUS ANEMIAS: THEIR DIAGNOSIS AND TREATMENT.

In *American Medicine* of July 5, 1902 Dock expresses his views as to these grave forms of disease, and as the treatment of pernicious anemia is a large subject he does not attempt to do more than outline it. It may seem trite to say that the patient is to be treated and not the disease, but nowhere is the statement more applicable. We often see patients who have improved much under the simple administration of arsenic, and we see those who have improved without any treatment, but in most cases it is only by

answering every indication that good results can be expected. Causal treatment, in patients with parasites or syphilis, is understood as a matter of course.

In the majority of cases the alimentary canal requires treatment, and this often begins with careful work on the part of the dentist, or by the use of the tooth-brush with antiseptic mouth-washes.

A test-meal, or rather a series of test-meals, should be given early, and the anatomical and chemical conditions in the stomach cleared up as much as possible. Hydrochloric acid is almost always indicated and often lavage is necessary.

The diet must be laid out in detail, with reference to the conditions in stomach and intestine, and care taken that the directions are followed. The bitter tonics can often be used with advantage. Constipation or diarrhea requires appropriate treatment. Intestinal antiseptics are sometimes of distinct benefit. In one case there was frequent and troublesome diarrhea. The patient herself found that salol was useful for that symptom, and took it in large quantities for five years, during which she had three severe relapses. Arsenic was not well borne, and though various other things were tried, the salol seemed most useful.

In many cases weakness is so marked that the patient must be put to bed and massage given. Friction with cod-liver oil or alcohol can often be used with benefit. The patient must always be warned against the danger of overexertion. Relapses sometimes quickly follow errors in this regard.

Bathing should be practiced according to the strength. Cold friction or the cold spray or douche should be used whenever possible. Not the least important aid in the author's opinion is fresh air. For several years he has kept anemic patients in the open air, just as in the treatment of tuberculosis. Many of them spend the entire winter day on open balconies with manifest advantage.

The relapses should be looked for, and not allowed to go far without treatment. The patient must be impressed with the necessity of having the blood examined at intervals, even when he is apparently well. The relapses may come on at any time, but especially after any depressing incident or disease. They are more likely to occur in winter and spring. Lack of fresh air is a more important factor than cold in these cases, and the author advises all patients either to go to a warmer climate and live out-of-doors, or to take open-air treatment at home at such times.

The author purposely mentions last those drugs that are supposed to act on the blood-forming organs or the blood itself. As long as we know so little of blood formation and the action of drugs upon that function, it is impossible to speak positively of the position of arsenic, which is so widely used as a specific in pernicious anemia. That the drug has a beneficial action on the blood is not doubted. In many cases we see the blood get worse in the beginning of its use. That has been explained, and with some reason, as due to increased breakdown of imperfect cells, but it may be due to an irritant action on the hematopoietic organs, followed in favorable cases by stimulation. In either case the treatment is not ideal, for it does not, so far as we know, reach the cause of the disease. It may be useful, however, in tiding the patient over a time during which the primary disease is being dealt with by the recuperative power of the body. It is important to remember that some patients cannot take arsenic by the stomach in any form. In such cases the hypodermic method may be tried, and will sometimes seem useful. According to any theory we can form of the action of arsenic in pernicious anemia, it must be given in such doses as have a distinct effect on the body. Accordingly, the blood and the alimentary canal must be carefully watched during its administration.

Iron is often said to be useless, sometimes even dangerous, in pernicious anemia. Like arsenic, it sometimes seems to cause a temporary deterioration of the blood, but it has often been used with apparent gain, alone or with arsenic. The fact that there is an excess of iron in the liver cells does not seem a good reason for withholding that drug. We know that in other anemias iron often seems to do good when the natural sources of iron show no fault.

The author often uses with satisfaction a drug rarely mentioned in this connection, viz., mercury bichloride, and not only in syphilitic cases, but in others. It acts much like arsenic, by irritating the blood-forming organs. It can often be

combined advantageously with arsenic and iron, as well as hydrochloric acid, the dose of each being carefully adapted to the case.

The author does not speak of all the details in the treatment of pernicious anemia, nor is that necessary, his aim being to contribute what he can to the closer study and more thoughtful treatment of the conditions that go under that name.

THE USE OF HIGH HEAT IN THE TREATMENT OF PRURITUS ANI.

In the *Journal of the American Medical Association* of July 12, 1902, ANDREWS states that every practitioner laments the inefficiency of the treatment for pruritus ani. Only a few surgeons seem to know that very strong heat almost instantly quenches the torment of itching in any part of the body, and that the relief thus obtained generally lasts from one to several days, but the anatomical form of the anus is such that its verge, which is the principal seat of the pruritus, is situated high up between the nates or a little above the summit of a hollow cone, and so covered with folds of integument that it can hardly be reached by heat-bearing appliances. Sometimes hot douches and heated wet compresses prove effectual, but generally they do not reach the real spot whence the distress of the patient emanates. The surgeon's advice to apply heat is good in principle, but it does not enable the clumsy patient to make his applications reach the apex of the anal cone.

Before proceeding to describe the instrument designed for this work, it will be best to consider the principles involved. Pruritus or itching may exist in any portion of the skin or adjacent margins of mucous membranes. It is often a neuralgic affection, due only to inflammations of the skin or the presence of toxins from pathogenic microbes, or from parasites and other external irritants. Whatever the cause and wherever the location may be, the application of heat as strong as the patient can tolerate quenches the itching, and in a few moments brings relief which lasts many hours and often many days.

In a former article the author referred to a domestic practice which seems to be totally unknown to dermatologists. Northern farmers, teamsters, and woodchoppers are troubled in the winter with acute pernios or chilblains on their feet. These are not usually confined, as asserted by dermatologists, to debilitated patients. They are the plague of the most vigorous and robust men. In appearance these pernios are insignificant red spots on the feet and toes. They are only slightly swollen and a little tender, but they have regular periodical exacerbations of pruritus. Once in twenty-four hours they awake into special activity and afflict the patient with violent itching, which lasts some two hours or more.

The author has found existing among these men the following treatment: When the exacerbation comes on, the patient takes off his boots and stockings, throws open his stove door, and holds each chilblain for a minute or two before the fire in a position where it will receive the radiant heat of red-hot coals. He holds the part as near the fire as he can tolerate with the help of considerable fortitude. Having thus treated all the pernios the pruritus is completely relieved, he draws on his hose and boots, and remains perfectly comfortable until the next day. He then repeats the process, and in three or four days is cured.

One farmer with pernios said he could not get a good effect from the dark heat radiated from the outside of the stove. He required the luminous heat emanating from red-hot coals. Another patient living in the city had two patches of psoriasis, which had lasted for several years, and for which he had taken arsenic a long time in vain. In some way he discovered the benefit of heat, and relieved the pruritus by dripping a small stream of very hot water upon the patches. Occasionally he got the same relief by holding the parts above the chimney of a lighted lamp. After some months of these occasional hot applications he obtained a permanent cure.

Many other patients having pruritus from psoriasis, eczema, and other causes have discovered the relief obtainable from strong heat. The Emperor Napoleon I. had a lifelong eczema on his thighs which caused him serious torment. His physician said he spent much time sitting in hot baths, where "he was continually reaching for the hot-water faucet" to increase the temperature. The author has found intelligent patients who had discovered

that very hot douches relieved them of pruritus ani.

Authors of works on rectal diseases have generally been ignorant or negligent as to this remedy, but a few of them have recognized its value and emphasized the necessity of making the heat strong. Mr. Treves, of London, says: "Bathe the parts in very hot water." Dr. Joseph Mathews, of Louisville, says "the parts should be bathed in as hot water as can be endured." Van Harlingen advised "hot water douches as hot as the skin will bear." Kelsey, of New York, directs "very hot water," and to be of any use it must be applied "as hot as the finger can bear." In the author's own publication (Rectal and Anal Surgery) he has long advocated "hot water—as hot as can be borne."

The highest heat which is endurable is about 130° F. Some patients will tolerate for a short time a small stream as high as 135° F. He has never found any one who could endure 140°; many cannot go above 125°. It will be remembered that a full-length hot bath cannot be used above 105°, but small local spots bear for a short time the higher temperatures above mentioned. To enable patients to apply sufficient heat to the anal canal without the risk of their injecting water at a dangerous temperature into the rectum itself, the author has devised an instrument, of which the following is a description:

The pipes have an inside diameter of one-eighth of an inch, and the cylinder of three-quarters of an inch. The inflow pipe is simply a rubber tube leading down from a fountain syringe or other reservoir filled with water of the proper heat and hung about four feet above the patient's anus. Attaching the rubber tube to the nib projecting from the side of the cylinder, turn the round end of the latter upward and open the faucet. The water will then expel the air and begin to run from the outflow pipe. Now close the faucet, lubricate the cylinder, and insert it about two inches into the anus. Then open the faucet again and let the fluid run until the hot water begins to appear and the cylinder becomes as hot as the patient can properly bear. Of course, the reservoir must not be filled with water dangerously hot. It can be tested with the fingers or with a thermometer in the reservoir. In cases where tissues of the anus or of other parts are much weakened by paralysis, or by exhausting disease, he presumes very high heat should not be applied.

The patient can be taught to use the instrument himself if he is reasonably intelligent. The position may be either lying on one side with the knees drawn up, or sitting obliquely on one hip, or astride a chair with the hips projecting over the edge. The treatment can be repeated from twice a day up to intervals of several days.

Of course, the surgeon will diligently examine the parts and seek to remove all discoverable causes of the pruritus, thus preventing relapses, but strong heat is the great primary remedy for the patient's sufferings. It is more than a mere temporary relief of his distress. By removing the tormenting irritation it gives the nervous tissues repose and helps to restore the parts to a healthy condition, and this principle holds true whether the pruritus be in the anus or in anv part of the body.

INFANTILE INDIGESTION: DIETETIC MANAGEMENT AND MILK SUBSTITUTES FOR CHILDREN.

To the *Medical Record* of August 2, 1902, FISCHER contributes a paper replete with practical suggestions. He tells us that the following substitutes have been of especial value to the writer, and are offered for temporary use in gastric and intestinal derangements:

How to Prepare Barley Water.—This can best be made by taking one heaping tablespoonful of ground barley flour and adding the same to one pint of water. Boil this thoroughly for half an hour, then strain through cheese-cloth, and add enough water to make one pint of barley water. It is advisable to sweeten by adding one heaping teaspoonful of granulated sugar. When sugar is contraindicated, as in fermentative conditions, add saccharin. When barley water is given for any length of time, and constipation results therefrom, then glycerin should be added. One teaspoonful of glycerin to each teacupful of barley water will make the same quite palatable, and will offset the constipating tendency.

How to Prepare Oatmeal Water.—This can be made by adding one table-

spoonful of oatmeal flour to a pint of water, boiling the same in the manner described in the preparation of barley water.

If the child is underfed, then frequently the addition of the white of a raw egg, well beaten, with either of the above mentioned barley water or oatmeal water, will be found advantageous. In like manner the writer has frequently added the yolk of an egg, well beaten, with barley water or oatmeal water properly sweetened, as a temporary substitute.

Vegetable Proteids.—Great success is frequently scored by vegetarians, especially by the use of the celebrated vegetable milks. When we consider the ingredients used, it is no wonder that they offer good temporary, and often permanent, substitutes for animal milks. The writer has frequently recommended the use of almond milk made by blanching almonds (sweet almonds) with scalding water and then rubbing them up thoroughly. One or two ounces of sweetened almonds with one pint of water will yield about one pint of almond milk. When it is to be used as the only substitute for milk the almonds can be thoroughly mashed and boiled with the water to extract all of the nutritive substance. This can best be done in the following manner: Scald about one to two ounces of sweetened almonds, removing the skin; then add about eight ounces of fresh water and mash the almonds to a pulp; boil this pulp with the water for about fifteen or twenty minutes, next strain through cheese-cloth, and add enough water to make one pint. Finally add one tablespoonful of granulated sugar. This can be given *ad libitum*, depending upon the age of the child to be fed. It is certainly a very nutritious substitute for milk containing proteid.

The writer frequently uses this almond milk as a diluent to break up the curd in cow's milk instead of using cereal decoctions. When children have eczema and erythematous eruption following the use of cereals, then almond milk may be used with advantage to dilute cow's milk. It is useful as a food in urticaria.

Vegetable Soup Substitutes.—Mashed peas, boiled with beef or chicken or veal, offers a very nutritious proteid substitute for milk. This will be found especially advantageous during the hot summer months, when milk is not well borne, and when the physician requires a nutritious food which can be fed in doses of two, three, four, six, or eight ounces at proper intervals, just exactly as milk would have been given.

Tea as a Substitute.—Weakened mixed tea is frequently of great service with or without white of egg. When children have diarrhea and milk cannot be given, then dextrinized wheat or dextrinized barley or dextrinized rice offers a convenient and valuable substitute.

Tea with Barley Water, Coffee with Barley Water.—Weak tea, mixed with equal parts of barley water, is very valuable as a temporary substitute in hot weather. It can be fed in teaspoonful doses. It should be made palatable by sweetening with granulated sugar.

Coffee diluted with barley water or with rice water is very valuable as a substitute for milk when marked cardiac depression from continued diarrhea exists.

A Few Points Concerning Milk.—When cow's milk is to be used for infant feeding a simple test can be used with advantage by almost every one. It consists in dipping a piece of blue litmus paper into the milk when it is received. If the blue litmus turns red, then it shows that the milk is acid. Such milk is entirely unfit for infant feeding, and it is necessary to add to such milk a pinch of either bicarbonate of sodium or bicarbonate of potassium. When acid milk is fed to children we will invariably have trouble.

It is advisable to learn the source of the milk, so that we can know the age of the milk received. A good plan is to procure milk which has been milked on the day it is bought. Such milk can be procured in a great many dairies. Several of our largest laboratories receive milk on the morning of the milking, and hence are in a position to supply fresh milk of a low bacteria count and before fermentation is developed. It is self-understood that the older the milk the more chance is offered to the development of microörganisms, and the greater the tendency to fermentations. It is stale milk that invariably causes gastroenteric disturbances. When fresh milk is procured, then the same may be safely fed in its raw state, after having been warmed to the proper feeding temperature.

When milk stands for several days, as it frequently does in New York City, then

no amount of boiling, Pasteurizing, nor sterilizing can destroy the toxins developed by the colon bacillus. Such milk is a deadly poison. The experiments made by Prof. Victor Vaughan, of Ann Arbor, Mich., have shown that, no matter how much heat is applied to such milk, its toxins cannot be destroyed. This investigator subjected milk to a temperature of 300° F. without destroying this toxin. The toxin produced in milk is a deadly poison, and it is this toxin that is the cause of cholera infantum, which ends so fatally. It is advisable, therefore, to secure clean milk from a clean source, and to feed it in clean vessels, if we desire good results.

If modern sanitary methods are applied in the stables, at the creamery, and, most important of all, at the home in which the milk is modified for infant feeding, then we have the remedy against the development of summer complaint, as well as of scurvy and rickets, which sometimes are the stepping-stones to tuberculosis in later years.

FORMULA FOR WEAK INFANTS IN SUBSTITUTE FEEDING.

When vomiting and diarrhea persist give either

Barley water, 4 ounces,

Or

Oatmeal water, 4 ounces.

Feed every two or three hours. Sweeten with granulated sugar, half-teaspoonful to each bottle.

If fermentation exists—colic, greenish stools, and eructations—use saccharin, one-half grain, instead of sugar for sweetening.

When constipation is caused by continued use of barley or rice water, then sweeten with glycerin by adding half-teaspoonful of pure glycerin to each four-ounce bottle of rice, oatmeal, or barley water.

FORMULA FOR ALMOND MILK FOOD.

Almond milk, 4 ounces;
Granulated sugar, 1 teaspoonful.
Mix. Feed above quantity every three hours.

Whey.—To make whey, take half a pint of fresh milk, heated lukewarm, not warmer than can agreeably be borne by the mouth (about 115° F.); add one teaspoonful essence of pepsin, and stir just enough to mix. Pour into custard cups; let it stand until firmly curdled; then beat up with a fork until the curd is finely divided; now strain, and the whey is ready for use.

Whey prepared from fresh cow's milk should be alkaline and contain from:

0.08 to 1 per cent of lactalbumin;
0.03 per cent of casein;
1.0 per cent of fat.

When such whey is added to milk, take of whey two parts, milk one part, for an infant under six weeks. This can be increased until equal parts of milk and whey are used. (To be used for a child several months old.)

FORMULA FOR WHEY FEEDING.

For an infant under six months:

Whey, 2 ounces;
Milk, 1 ounce.

Warm to blood temperature (about 100° F.) for three minutes, then feed.

Above quantity can be fed every two or two and one-half hours.

When feeding a child two to four months old:

Whey, 2 ounces;
Milk, 2 ounces.

Feed every three hours.

If the above is well borne, we must gradually increase by adding an ounce of food; the formula will then be:

Whey, 2½ ounces;
Milk, 2½ ounces.

Feed above quantity every three hours.

The general condition of the infant—its sleep, its stool, and its body weight—is an important factor to determine an increase in the quantity of food.

If the child cries very much after feeding and appears hungry, then we can give:

Whey, 3 ounces:
Milk, 3 ounces.

Feed every three hours.

Some children at three months will take very readily six ounces of food. If the appetite warrants it, and the stool is homogeneous and well digested, then we need not hesitate to give the following:

Whey, 3 ounces;
Milk, 4 ounces.

Feed every three hours.

The weight is the determining factor. If the child does not thrive, increase the quantity of milk and decrease the whey.

In the case of feeble and debilitated children the writer frequently orders

sweetened whey instead of water for quenching thirst. This is especially valuable in summer.

ABORTIVE TREATMENT OF BOILS.

A. BIDDER *(Deutsche Medicinische Wochenschrift,* May 1 and 8, 1902) describes his method of dealing with furuncles, by which he includes those boils which consist of several foci of infection, running together and usually going under the name of carbuncle, but which are not produced by the bacillus anthracis. The method consists of injecting watery solutions of carbolic acid subcutaneously. He inserts his needle, in the case of smaller boils, through the skin at the extreme edge, and in the case of the larger ones (carbuncles) through the hard outer zone, and directs it obliquely toward the indurated tissue. A little of the solution is then injected, and the needle is withdrawn and inserted into another site, where more of the solution is injected, and so on until sufficient has been done; for large boils the whole syringe may be emptied. As a rule he uses a two-per-cent solution, and he strongly advises a stout needle. Shortly after the injection—and he finds that one usually suffices—a fair amount of pain appears, but this passes off after a short time. The ultimate results are very satisfactory, and except in cases in which there was much suppuration very little scarring occurred. He believes that this method is capable of arresting the infective process in any stage; in the early ones the necrosing of the tissues is prevented, and in the later stages further necrosis is avoided, and the tissue which has already died is quickly loosened and cast off. He describes the action of the injections as an almost magical one. He discusses the physiological action without arriving at any definite conclusions, and appends the histories of a few of his cases. —*British Medical Journal,* June 28, 1902.

[This is an old and well recognized plan of treatment.—ED.]

TREATMENT OF NINETY-TWO CASES OF THERMIC FEVER.

To the *American Journal of the Medical Sciences* for September, 1902, LEWIS and PACKARD contribute a paper giving us these important details. All of the cases except those with a temperature below 102° F. were treated in a large tent, open at the ends, covered with a fly, and having an asphalt graded floor. The fly was kept constantly moist by means of a lawn-sprinkler placed on the ridge-pole, an expedient that did good service and did not seem to increase the humidity. Within the tent there were two large electric fans, constantly working, and faucets were conveniently arranged for the furnishing of cold water. The tent was furnished—aside from the beds—with a movable bath-tub and a medicine cabinet. In a few cases the hose was employed by directing a stream of water from a distance over the patient's body. The experience this summer in the few cases in which this method was employed rather tended to confirm the observation of former years. While this method of applying cold seemed to aid respiration, it rather increased the tendency to convulsive movements. The use of the bath-tub was soon abandoned, owing to the impossibility of reducing the temperature by this means with sufficient rapidity to at all keep pace with the number of admissions. In addition to this, it required more physical labor to lift the patient in and out of the tub, and to practice friction on the surface, than was the case with rubbing with large pieces of ice, which acted more rapidly and equally beneficially in reducing the temperature. In many cases the temperature fell rapidly to normal after rubbing with ice in from two to fifteen minutes. With the fall of temperature consciousness frequently returned, and the patient required no further attention. Frequently with the return of consciousness delirium occurred, which was at times quite violent, and in a few cases persisted for some hours. Exceptionally a second rise of temperature occurred, but seldom to such a height that it was not controlled perfectly by either a cold sponge or one cold bath.

The question as to the advisability of bleeding in cases of sunstroke has been much discussed. As a routine measure of treatment the authors would by no means advise it. In certain cases, however, where with the fall in temperature there was not a corresponding decrease in the other grave symptoms, as well as during the existence of high temperature in desperately ill cases, they found it

beneficial. Feebleness of the pulse was not considered a contraindication to this procedure, and in some cases the character of the pulse improved as the blood flowed from the arm. The measure was employed in eight cases; of these four died. In regard to bleeding, as well as in regard to the two measures still to be noticed, it is to be remembered that it was only employed in the most severe cases. The mortality percentage among cases in which venesection was practiced was, therefore, necessarily high. It is their belief that in no case did the removal of blood do any harm, and in many cases the abstraction of blood was followed by an improvement in the circulation, in the character of the breathing, in the color of the patient, and in the mental state, due either to this or to the introduction of saline solution. The amount withdrawn varied from six to twenty ounces.

The employment of normal saline solution introduced by various channels was first advocated upon purely theoretical grounds. As has been pointed out, while there is some evidence that diminished serosity is present in some cases, none of the tests which the writers were able to employ to confirm the existence of this condition enabled them to assert its presence in their cases. This is seen in the detailed report of certain cases, with the account of the blood picture in the cases wherein this was examined. Hypodermoclysis was employed in five cases; all of these were of the severest type. Of this number one died. It was found that this method of introducing salt solution occupied too much time to be perfectly satisfactory. They believe that valuable time may be lost in getting the saline solution into the circulation by this measure, and it has the additional disadvantage of requiring the undivided attention of at least one person during ten or fifteen minutes at a time when rapid work is essential even with a large staff of assistants. Intravenous injection of normal saline solution was found to be more applicable because of the greater rapidity with which the blood was affected, and also because of the saving of time on the part of the assistants. This measure was employed in ten cases; of these four died. The operation was readily performed and took but little time, because in the large majority of cases the same incision in the median basilic vein employed for bleeding was at once used for the injection of the saline solution. Although the conditions were by no means favorable for thorough antisepsis, in spite of all efforts to accomplish this, it is to be noted that in no case did any untoward results follow from infection of the wounds made either by the lancet or by the needle.

Their conclusions in regard to the value of the last three measures are that in some cases where the other symptoms do not improve, as the temperature is reduced by rubbing with ice, the abstraction of blood from the median basilic vein to the extent of from ten to eighteen ounces causes the pulse, respiration, and color of the skin to improve. On four occasions convulsions occurred after bleeding and transfusion. While it is difficult to estimate the value of the introduction of normal saline solution they saw no evidence of its having any harmful action, and usually felt assured that the patient's condition was improved by one or the other of these procedures.

Among the sequelæ should be noted one case of jaundice coming on three days after onset in a case having a temperature of 110° F., where there was also delirium tremens.

While from the rapidity with which these patients were brought to the hospital, Lewis and Packard were unable to make as close a study of them and to keep as careful records of their condition as they wished, they make this report in the hope that in the future they may be able to more completely study some of the many points of interest in this condition. It seemed to them that valuable results might follow the further study of the condition of the eye-grounds, the specific gravity of the blood, its spectroscopic examination, a frequent estimation of the leucocytes, and a more complete study of the toxicity of the blood serum. We also believe that the introduction of normal saline solution in large quantities into the body has a beneficial result, although the few examinations of the blood which they have made do not directly point to the method by which it causes relief to symptoms. Possibly the toxicity of the blood, a subject into which they could not enter, may explain its supposed beneficial effect.

THE REMOVAL OF FOREIGN BODIES FROM THE EYE.

Professor HART has contributed to the *Journal of the American Medical Association* of August 30, 1902, the following conclusions as to the use of the magnet for these purposes:

1. The size of the splinter of iron or steel, and its approximate position in the eyeball, should be known before an attempt is made to extract it by either the medium-sized or the giant magnet.

2. The *x*-rays are the most certain method of diagnosis in injuries from all kinds of foreign bodies.

3. The large and medium-sized magnets are of value in determining the presence of iron or steel, but negative findings cannot be accepted as conclusive evidence of the absence of the metal in the eyeball.

4. The Haab magnet is superior to all forms of smaller magnets in extracting iron or steel from the vitreous chamber by way of the anterior chamber, but the great power of the instrument requires that it shall be used with caution.

5. When the body is to be extracted through an opening in the sclera close to the previously determined position of the metal, the medium-sized magnets are shown by experiments to be as effective as the giant magnet.

6. The entrance of the magnet point into the vitreous is harmful, and should never be attempted except when other means of extraction have failed.

ACUTE DILATATION OF THE STOMACH.

Several cases of acute dilatation of the stomach reported by various observers have been collected by GILLESPIE (*Edinburgh Medical Journal*, July, 1902), from which it appears that this clinical entity, denied existence by many authorities, is marked by rapid feeble pulse, no fever, vomiting of small quantities of brown or greenish non-feculent matter, great thirst, meteorism, dull area round navel, splashing sounds, local pain and tenderness, and cessation of stools. Peritonitis, ileus, or hemorrhagic pancreatitis simulates it. The stomach-tube will decide; removing liters of fluid, full of gas bubbles; the belly falling in. The same constitutes the best method of treatment.

For the first few days rectal feeding and subcutaneous injections of salt solution are indicated. If there is no bile in the stomach contents, the kink in the upper part of the duodenum can be reduced by posture; the pelvis raised, while lying face down or on the left side. If the contents contain bile, an injection per rectum of at least two liters (3½ pints) of six-per-cent salt solution should be given, the patient lying on his side. If none of the solution returned within twelve hours be bile-stained, the obstruction is probably impermeable, and an operation is advisable.

ASCITES: SURGICAL TREATMENT.

In a fairly large number of instances hopelessly chronic cases of ascites have been cured, says MONTGOMERY (*Medical Chronicle*, April, 1902), by surgical means. Counting his own cases with those found in literature, out of the total of 38 there have been 10 deaths (26.3 per cent), 9 cases unimproved (23.6 per cent), 4 cases improved (10.5 per cent), and 15 recoveries (39.4 per cent).

The operation in these cases has doubtless been performed indiscriminately on all varieties of cirrhosis and in all varieties of ascites. Many of the patients seem to have been in the last stage of the disease, with failing hearts and disorganized kidneys, and quite unsuited for operation. In others, again, the diagnosis has been most uncertain.

For any benefit to arise, Talma states that the cirrhosis must be primary, and not secondary to some other disease, as chronic peritonitis with serous effusion. The operation is scarcely indicated, Packard and Le Conte go so far as to say, or even contraindicated, if there be chronic peritonitis. The records show, on the other hand, that a large number of the cases were examples of chronic peritonitis with cirrhosis. It is just this class of cases, Hale White suggests, which seem to give the best results.

Dr. Sanson sums up the situation by saying that as a matter of practice it is impossible to distinguish between pure cirrhosis and cirrhosis with chronic peritonitis. Therapeutically it is necessary to modify the balance of circulation, and surgical measures constitute a better way of effecting this than the old-fashioned plan of tapping, with copious diaphoresis.

Medical treatment, Rolleston and Turner think, should chiefly be used for the purpose of excluding any possible syphilitic disease of the liver. When a course of iodide of potassium has not benefited any case of ascites due either to cirrhosis or to syphilis, then medical treatment should be suspended and operative measures adopted. Operation in the preascitic stage of the disease they would also suggest, if the diagnosis can then be made. In one case this course was adopted. The operation was undertaken on account of severe hemorrhages from the bowel. The patient had hypertrophic cirrhosis without ascites, and after operation the hemorrhages ceased. Where hematemesis is free, Talma recommends that this operation be performed. Bidwell operated on two children, one with renal and the other with cardiac ascites, with apparently some success.

Morrison and Moullin both insist that, after one or two tappings have failed, operation offers the best chance for a prolonged and useful life.

CAUTERIZATION OF THE PROSTATE THROUGH A PERINEAL OPENING.

To aid diagnosis and, where advisable, to enable the cautery to be used with the operative area of the prostate under direct inspection by the introduction of the instrument through a perineal opening, WISHARD *(Journal of Cutaneous and Genito-Urinary Diseases,* June, 1902) has devised a special instrument that he has used successfully on four patients.

The instrument consists of a straight tube with an oblique opening at its distal end, somewhat in the form of an old-fashioned rectal speculum. The tube is forty-two millimeters in circumference, and six and one-half inches in length without the obturator. It has an auxiliary tube carrying a small incandescent lamp of low heating power, which is exposed through a small window near the distal end and on the longer side of the tube. On the short side of the distal end of the tube, and almost directly opposite the lamp, a groove is cut in the side of the tube for the insertion of the cautery. The groove is intended to give greater rigidity to the knife and greater certainty in the direction and length of the incision. A plug contains a diagnostic window for closing the outer end of the tube. On the side of the plug is a small nipple, through which air can be pumped into the bladder. A very good view of the prostatic urethra and vesical orifice can be obtained without air dilatation, but the latter is an advantage when the instrument is carried on into the bladder. By counter-pressure with the finger in the rectum, and by tilting the instrument, a better view is obtained of the area immediately behind and on the sides of the vesical orifice.

The cautery knife can be made any length or shape and can be used through the tube, while the bladder is dilated with air and while the operator inspects the procedure.

Parallel bars carrying the cautery are inserted through and become a part of the plug which contains the diagnostic window.

The cautery is introduced straight, and brought into position within the bladder over the growth at an oblique angle by manipulating the forceps-handle arrangement on the outside.

The auxiliary tube, in the newer instrument, carries a lens system similar to that used in the ordinary cystoscope, and enables the operator to see at a right angle and to observe the cautery knife as it is brought down over the growth within the bladder. With the bladder dilated with air, the operator can obtain a direct view about the vesical orifice or within the bladder. If preferred, the lens system attached to the prostatic tube can be dispensed with, and the operator can depend upon the direct view through the window in the air plug.

The operations have been done under local anesthesia, and were preceded by dilatation of the prostatic urethra and by perineal drainage over periods varying from one to eight weeks. The subsequent use of the cautery after the bladder had been drained was also under local anesthesia.

The finger was passed into the wound and the prostatic urethra was dilated as far as the finger would reach, immediately after the opening was made. The vesical orifice, in one case, could not be reached by the finger, and a pair of lithotomy forceps was passed into the bladder. The handles of the forceps were spread to dilate the vesical orifice. When

the finger was forcibly passed into the prostatic urethra, and when the vesical orifice was dilated, more or less pain was felt in each case. The pain was brief.

The cautery was used after the bladder had been rested, and the element of congestion in the bladder and prostate relieved by drainage. Only one patient complained of decided pain when the cautery was used.

TUMOR OF THE TESTICLE: RESULT OF EIGHT OPERATIONS.

No conclusions have been drawn from his study of eight cases of tumor of the testicle, but SCUDDER *(Journal of Cutaneous and Genito-Urinary Diseases,* June, 1902) believes the group to be suggestive.

The first patient, forty-one years old, had swollen testis for three months. Five years after orchidectomy for the removal of the myxosarcoma diagnosed the man is well and in good health.

Six months after an injury to the right testis of the second patient, fifty-seven years old, it began to increase in size. For a year after that it continued to increase, until it became three times its natural size. Five years and six months after the orchidectomy for myxosarcoma the patient is well and strong.

Orchidectomy was also performed for diagnosed round-celled sarcoma in the third case, a man fifty-four years old, whose left testis swelled without apparent cause for four months. Three years after the operation the man is well and in perfect health.

The right testis of the fourth patient, an adult, could always be felt in the inguinal canal, but it was undescended. For two years prior to examination the testis increased in size. It was tapped and bloody fluid removed. An oval tumor, seven by four inches, was found in the right inguinal region, parallel with the line of the inguinal canal. The cord was apparently thickened. Round-celled sarcoma was diagnosed after examination of the tumor. The man is well and in good health after orchidectomy two years and a quarter ago.

Case five was that of a poorly developed man, twenty-eight years of age, having double congenital herniæ, and an undescended left testis. Three months prior to examination an abdominal tumor in the left inguinal region began to appear. The tumor, adherent posteriorly, was removed. Round-celled sarcoma was found. Seven months after operation the patient died. The spinal cord was involved in a similar growth from the eleventh dorsal to the first lumbar vertebra.

Two years after the removal of adenocarcinoma of the testicle of a man thirty-eight years old, who had suffered two and a half years prior to examination from trauma to the left testis, which was repeated a year later, the man is well and in good health. Orchidectomy was performed.

After a blow, the testis of the seventh patient, an adult, became painful and enlarged. Seen nine months later he had lost ten or fifteen pounds in weight. Orchidectomy was performed, and an examination showed the presence of cystosarcoma. New growths were found in the spleen and liver, as well as all over the body, when the man died one year and three months after operation.

Swelling began in the left testis a year before examination in the eighth case, a man fifty-one years old. When the testis was about the size of a small cocoanut, orchidectomy was performed. Teratoma was diagnosed after investigation. Six months after removal of this teratoma of the testicle the patient died.

RELAXATION OF THE ABDOMINAL WALLS UNDER ANESTHETICS.

Taking a general survey of the conditions of the abdominal wall which interfere with an operator's convenience BLUMFELD *(Lancet,* May 31, 1902) remarks that there are some unusual cases in which the anesthetist cannot remove the difficulty, but that in the great majority of instances he can obtain a perfectly satisfactory condition by maintaining unimpeded breathing, complete absence of cyanosis, and sufficiently deep anesthesia. These desiderata he obtains by properly selecting his anesthetic, by giving it freely with a liberal air-supply, by keeping the air-passages free, and by holding the lower jaw well forward. When this is not enough the mouth must be slightly opened and the tongue drawn out. One other point may be mentioned, viz., the element of time. It often hap-

pens that only toward the close of an operation is the patient's abdomen in a perfectly satisfactory condition from the surgeon's point of view. It is a good plan, therefore, in abdominal cases, to let the anesthetist get to work at the earliest possible moment—as soon, for instance, as the surgeon begins to get his instruments ready. By such a step a comfortable state may be insured throughout instead of at the close of the operation.

ABDOMINAL INFLAMMATION AND ITS QUIESCENT OR LATENT PERIOD IN GRAVE CASES.

Cases can be recalled in grave abdominal inflammation in which, after an acute onset, the pain subsides, the vomiting ceases, the temperature falls to normal, and the patient expresses himself as being tolerably comfortable. This period sometimes proves to be a deceitful and treacherous calm, and it is this period that TUBBY (*Lancet,* May 10, 1902) terms the quiescent or latent period.

There are many cases other than gastric cases, two of which are reported by Tubby, in which this quiescent period is marked. From time to time it is a prominent feature of:

1. Injury to the intestines with or without rupture.

2. Perforation of the intestines by ulceration.

3. Injury to, or bruising of, the peritoneal connections of the viscera, with interference with their blood-supply.

4. Acute diseases of the genital organs, especially of the Fallopian tubes.

5. Acute appendicitis, either ulcerative, perforative, or gangrenous. This disease undoubtedly affords by far the greater number of examples of apparent improvement.

A careful compilation of abdominal cases and the recording of clinical signs show the presence of certain symptoms —even in obscure cases—as of great moment.

The pulse and temperature should be frequently taken, at least every three hours. These may rise together in due proportion, or there may be a slightly elevated temperature with an entirely disproportionate pulse-rate, or the temperature may be subnormal when taken on the surface, while the pulse may be greatly accelerated. If the altered relationship has been established for a day or two, the prospects of operation are extremely unfavorable. Sometimes after an initial rise of temperature and pulse there is a fall in both, succeeded after a few days by a rise. This indicates the presence of a considerable amount of pus, and in acute appendicitis, unless the abscess be evacuated there is grave danger of it bursting into the peritoneal cavity.

Of all the physical signs, a transient or persistent rigidity and the absence of other symptoms are the most valuable, and they become convincing when signs of intestinal peristalsis are absent.

In the late stages of abdominal diseases, the fatal significance of distention is well known. Distention which persists for longer than from twenty-four to thirty-six hours, and is unrelieved by treatment such as a turpentine enema, is of grave moment.

Should vomiting, usually absent during the quiescent period, recur in spite of careful feeding, careful nursing, and, more especially, should it persist after the administration of sedatives, the symptom is not one to be overlooked.

In perforative appendicitis there is a very abrupt rise of leucocytes, and counts of over 20,000 indicate either pus, gangrene, or peritonitis. If the number be under that the deduction is uncertain, for in thirty-five per cent of non-purulent cases there is merely a small increase in leucocytes. This sign is not to be relied upon absolutely, but if there is an absence of leucocytosis it is a symptom of grave importance. It should be remembered, however, that leucocytosis is absent in typhoid fever, but is almost invariably present in ovarian abscesses, pyosalpinx, perinephric and nephric abscesses, and in suppuration generally. The presence of leucocytosis when the influence of bleeding and digestion is excluded is practically unknown in uncomplicated gastric ulcer. It should be remembered also that there is considerable leucocytosis after the administration of ether. This method of clinical investigation promises to be of great value to show when mischief is going on even when the other symptoms are quiescent or latent.

In a patient who begins his illness with symptoms referable to the abdomen, but who remains ill although the symptoms

in that region have apparently subsided, careful examination of the chest and the detection of either a pleuritic rub or the presence of fluid in either of the pleural cavities, may serve as an indication that mischief is still going on in the abdominal cavity, and that exploratory operation is called for. The detection of fluid in the chest, especially on the right side, may lead on exploratory operation to the further detection of a collection of pus, either subdiaphragmatic or situated deeply in the flank.

RETRODISPLACEMENT TREATED BY A NEW OPERATION.

Alexander's operation, hysterorrhaphy, and like procedures have always been unsatisfactory in treating retrodisplacement. There is a continual attempt to devise some procedure that would overcome the disadvantages of these operations. The one which has appealed most to BALDY *(American Journal of Obstetrics,* May, 1902), however, is that devised by Webster. Baldy himself has improved upon it, and performs his operation as follows:

The round ligament on each side of the uterus is picked up and a ligature is thrown about it close to the uterus, so placed as to secure the artery. The round ligaments are then severed close to the ligatures. This leaves the uterine ends of the ligaments ligated and the other ends free and bleeding. The bleeding is controlled by a fine ligature to each vessel, or by the sutures which fasten them in the next step of the operation. A pair of forceps is now made to perforate the broad ligament from its posterior aspect (at the point at which the round ligament is cut on the anterior surface), and the cut end (the pelvic end) of the round ligament is grasped in the bite of the forceps and pulled through the hole in the broad ligament (made by the forceps in perforating) until it protrudes on the posterior side of the broad ligament. The opposite side is treated in a similar manner. The cut ends of the round ligaments are now attached by means of sutures to the cornua of the uterus on the posterior aspect of the uterus directly back of the original point of attachment of the normally attached round ligament. The point of attachment may be higher or lower than this, as the surgeon may find necessary to accomplish the result. If necessary, as much of the round ligament is cut off before suturing it to the uterus, as is necessary to take up any slack and give the proper amount of tension and support to the uterus. This ends the operation. The suture is a continuous one and may be either chromicized gut or silk. The effect of this procedure is to draw the fundus of the uterus upward and forward into a perfect position.

The uterus remains a pelvic organ. It has no artificial supports. It is as free to expand in pregnancy as it was originally, with no greater danger of the tearing away of its supports. There are no adhesions to give future trouble from pain or possible strangulation of the bowels.

There is absolutely no tension, and therefore no danger of a pregnancy or anything else destroying the operation, or of an abortion occurring. The tops of the broad ligament are twisted forward, not enough to endanger the Fallopian tubes by strangulation, but sufficiently so (more or less as the surgeon desires) to draw up and suspend most perfectly the ovaries, if they be prolapsed and the ligaments are overstretched. The results are perfect, both theoretically and practically.

NEPHROPEXY BY A NEW METHOD.

If the kidney can be permanently maintained in position without any injury of its structure, such an operation has distinct advantages over those in vogue. Keeping this in mind, BEYEA *(Pennsylvania Medical Journal,* May, 1902) describes a new method of performing nephropexy.

A longitudinal incision is made in the lumbar region parallel with and about four fingerbreadths from the spinous processes of the vertebræ, thus close to the anterior border of the spine muscles. It begins just below the last rib and extends downward for a distance of three and a half inches. The skin and fat are divided down to the fascia, the fascia incised, the muscles separated in the direction of their fibers, cutting again through the lumbar fascia and separating the quadratus lumborum muscle. The perirenal fat is exposed and is likewise incised, opening the space of Garrotta. Then by rolling the patient downward on the Edebohls in-

flated bag, assisted often by traction on the perirenal fascia and the pressure of the assistant's hand opposite to the incision on the anterior abdominal wall, the kidney is delivered out of the wound. The surgeon then selects a position at the hilum of the kidney in the perirenal fascia which is free from blood-vessels, and about one centimeter from the ureter and renal vessels, which he perforates with the blunt end of a dissecting forceps. Then an ordinary rubber drainage-tube, previously sterilized and of sufficient length to surround the kidney and to protrude for some distance out of the wound when the kidney is replaced, is introduced through this opening made with the forceps and clamped. Similarly a second tube is introduced below the ureter and vessels and surrounding the kidney. The drainage-tubes, being surrounded by and passing through an opening in the perirenal fascia at the hilum, are prevented from changing their position and slipping over the convex end of the kidney, or in any way interfering with the ureter or vessels. The kidney is then replaced, the drainage-tubes extending through the incision. The muscle incision is sutured, leaving a small opening for the tubes, with continuous catgut suture. The skin wound is closed by an intracutaneous suture, again leaving the same opening. An oblong portion of gauze is now placed over the wound, and over this one with gentle traction ties the elastic drainage-tubes. The tubes being elastic and applied with little or no tension, the kidney tissue cannot be constricted or its circulation interfered with. The kidney is secured a little below the normal and in the most favorable position. The usual dressing and binder are placed over the wound.

The first dressing is made at the end of ten days, the silk intracutaneous suture being removed at this time. The tubes, which easily slip out, are removed after three weeks. The wound left by them quickly heals, being completely closed within three or four days. The tubes remaining in this position for three weeks secure the formation of two connective tissue tubes, then after contraction two connective tissue cords, one encircling the kidney above and the other below the hilum, from which extend adhesions to the capsule of the kidney and the surrounding perirenal fascia. The amount of adhesion is dependent upon the presence of aseptic rubber tubing, acting simply as a foreign body and causing only very mild irritation, and therefore never producing extensive adhesions to in the least injure the kidney structure, but, as experience has determined, constantly of sufficient strength to permanently maintain the kidney in a fixed position. The muscle and skin wounds heal by first intention, except for the tube tracks, which heal with the smallest cicatrix, as does any drainage track under the same conditions.

This operation has now been performed in eight cases, three operated upon two and a half years ago, three two years, one one year, and the other six months. In the first three cases one tube was introduced; since then, to make more certain the fixation of the kidney, the operation described has been adopted. All the patients have recently been carefully examined, and the kidney found fixed in position. In all but one the symptoms have been entirely relieved. In this one the patient suffers from gastroptosis, and it is hoped to relieve this by an operation devised for this condition.

POST-MORTEM SIX YEARS AFTER GASTROJEJUNOSTOMY.

A man of thirty-eight came to CORDIER (*Kansas City Medical Index-Lancet*, May, 1902) to be treated for gastric pain. Food on the stomach caused vomiting, and sometimes fresh blood appeared. At times large quantities of strongly acid and offensive material would be thrown up after being retained for two or three days. Even then gaseous distention caused great distress.

An enormously dilated stomach was observed. There was no tenderness at any spot over the abdomen, and no enlargement or induration could be detected through the thinned abdominal walls. A diagnosis of pyloric obstruction resulting from the healing of a non-malignant ulcer was made, and an operation to establish free communication between the stomach and the lower alimentary tract was performed.

The anastomosis was made near the pyloric end of the stomach. The incision in the stomach was made in its anterior wall about four inches from the pylorus. A coil of jejunum fifteen or eighteen

inches below the pylorus was selected as the suitable site for the incision in this part of the canal. The usual procedures were employed in the suturing and in the use of the Murphy button.

The patient became well and strong. He gained weight, his digestion was perfect, and he continued in this condition for six and one-half years, when he died from acute pneumonia.

The post-mortem showed that there was complete obstruction of the pylorus. The stomach had regained its former size, and the muscles were well developed. They were also in a healthy condition. The part of the duodenum and jejunum above the point of anastomosis, though healthy, showed evidence of atrophy from disuse. At the site of the anastomosis there was no omentum or other adhesions, except those made by the union of the bowel to the stomach. The opening from the stomach into the lower segment of the bowel was as large, apparently, as at the time of operation. There seemed to be a valvular action that prevented the contents of the stomach from going into the upper segment of the bowel. A similar arrangement seemed to exist preventing the bile from going into the stomach. On filling the stomach with air or water, not one drop or bubble could be forced through the pylorus. The water would enter the lower segment of the bowel with perfect ease, and none at all would go into the upper segment until the stomach and lower segment of the bowel were thoroughly distended.

The Murphy button, instead of passing, had dropped into the stomach and remained there until the time of death. Its presence in the stomach had never given rise to a single symptom. One end of the button was very much destroyed, presumably by the secretions of the stomach.

LINEN SEWING-MACHINE THREAD FOR LIGATURES AND SUTURES.

Linen sewing-machine thread has several good points as material for ligating and suturing. It can be easily procured; it is cheap; it can be easily sterilized by boiling in plain water, and can be stored then in methylated spirit; it is strong; it makes an excellent knot; it is easy to work with; it runs through the eye of any suitable needle easily.

After using several sizes, BARKER (*Lancet*, May 24, 1902) now uses but three—No. 40, which is as thick as need be desired for the abdominal wall, or for ligature of the larger arteries; No. 60, which is thinner; and No. 90, which is as fine as can be desired, say, for a suture of the intestines. The first size is white, the second red, and the third black. They are boiled for an hour. A little of the dye comes out. Boiling does not rot the linen, as it does cotton.

It has been given a successful trial in enterectomy and gastroenterostomy. Where it may be seen in the skin, it appears non-irritating except when tied too tight. It comes out at the end of about ten days just as it went in. It probably is not absorbed at all.

CANCER OF THE BREAST AND OPERATION.

A summary of forty-six cases of cancer of the breast operated upon and surviving the operation from five to thirty-two years is presented by BRYANT (*Medical Press and Circular*, May 21, 1902), who also describes the operation he has adopted with favorable results and shows that the results of operation, whether upon the breast or elsewhere, would be much better than they are now if they could always be undertaken during the early development of the disease. Every breast tumor, neither clearly inflammatory nor encapsuled, which seems to involve gland tissue, and may therefore be cancerous, should be at once explored and removed if found to be cancerous, with the whole gland, and recurrent growths when localized should be similarly treated.

In advanced and neglected cases, where the lymphatic glands and covering integument are involved, Moore's, Banks's, Halsted's, or Gould's so-called complete operation may be called for, but results are not by any means so likely to be as favorable as those reported by Bryant. Lastly, in cases of recurrence not favorable for operation, unless the removal of the ovaries can be shown in the future to be successful, the *x*-rays should be employed. The influence of the rays, to make them effective, must be maintained for several months after they have seemed to be beneficial; a three-months' course, with about three applications a week, appears to be

the shortest from which any permanent good is to be expected, and this treatment is full of hope.

Bryant has obtained such results that he holds the operation he has performed for a number of years to be a complete and adequate measure under the most favorable conditions.

The whole gland that is diseased is removed with the skin and fat over the diseased area. The axillary glands are dissected out of the axilla and subpectoral spaces in every case which appears to be suspicious, otherwise do not dissect it out. Bryant's incision into the axilla skirts the axillary border of the pectoral muscle. The wound is drained through the axilla for the first two or three days.

The pectoral muscle is dissected clean. Do not remove it, although should disease be found to have invaded the muscle, the diseased muscle must be freely taken away. The removal of the muscle as a routine measure is unnecessary.

FURUNCULOSIS, SYCOSIS, AND ACNE TREATED WITH INOCULATIONS OF A STAPHYLOCOCCUS VACCINE.

After considering various facts relating to the subject, WRIGHT (*Lancet*, March 29, 1902) concludes that inoculation will be associated with risk only where the dose of vaccine employed is such as seriously to diminish the patient's resisting power. The process of bacterial inoculation as applied to a patient who is the subject of a bacterial invasion is, in reality, a process of temporarily taking away from the patient his power of resistance with a view to his receiving it back with usury.

On this general basis, Wright recently undertook some preliminary work in connection with the therapeutic application of antistaphylococcus inoculations in the treatment of localized staphylococcus invasions. The vaccine employed consisted in each case of staphylococcus cultures which had been sterilized by heating.

The first of the six cases reported was that of a man forty years old, who suffered from furunculosis complicated by sycosis and eczema of the face. During the seven years that had elapsed since the onset, the patient declared that he had never been free from boils for more than three months. Every form of treatment that had been tried failed to give relief. The condition of sycosis was associated with weeping eczema, and was best marked on the region of the skin.

A cultivation, made on September 16, 1900, from a small superficial boil on the face yielded a pure culture of the staphylococcus albus, and on September 19 and 24 there was yielded a pure culture of the staphylococcus aureus. A count of the different varieties of white corpuscles showed these to be present in the blood in normal proportions. Alkalinity of the serum was normal. There was reason to conclude that neither the serum of the patient nor any of the control sera exerted any inhibitory effect upon the growth of the staphylococcus.

Investigation of the agglutinating power exerted by the serum upon the staphylococcus was undertaken by mixing together in capillary tubes equal volumes of a suspension of an agar culture of staphlylococcus and serum in various dilutions. The observations were undertaken on three different samples of the patient's blood. On one occasion only was a sedimentation found, and this was obtained only in the twofold dilution of the serum. The sera of four normal men were at the same time examined by the same method. Two of these showed an agglutination reaction in all dilutions up to a sixteenfold dilution. The two others showed the reaction only in the two-, four-, and eightfold dilutions.

Nutrient broth was inoculated with a staphylococcus aureus which had been subcultured from one of the original cultures obtained from the patient. After cultivation for three weeks at a temperature of 37° C., the culture was sterilized by exposure for twenty minutes to a temperature of 65° C. An addition of 0.5 per cent lysol was made to the sterilized culture. The toxicity of the vaccine was then tested on guinea-pigs. It was found that when the quantum of the vaccine inoculated corresponded to two per cent of their body weight a moderate amount of edema and a certain amount of constitutional disturbance were produced.

On October 25, 1900, the patient was inoculated subcutaneously in the flank with one cubic centimeter of the above vaccine. Twelve hours afterward there was considerable headache, the patient's temperature stood at 100.6° F., and con-

siderable redness and tenderness had developed at the site of inoculation. The symptoms had entirely passed off after the expiration of thirty-six hours. On November 1, 1.5 cubic centimeters of the same vaccine was inoculated. The inoculation was followed by similar but somewhat less severe local and constitutional symptoms. On the 13th 1.5 cubic centimeters of the same vaccine was inoculated. Both the local reaction and the general reaction were very slight, the temperature not rising above 99.4° F.

From the date of the first inoculation the patient's condition began to improve. With the exception of two small superficial boils which developed between the dates of the second and third inoculations, and two further similar small boils which developed in the earlier part of 1901, the patient had been absolutely free from furunculosis. The sycosis, eczema, and the affection of the eyelids also began to mend from the date of the first inoculation; the two former had practically disappeared within a month from the beginning of the treatment. The ophthalmia tarsi lasted a little longer. His face is now, and has been for a period of over twelve months, absolutely clean and free from eruption.

The second case was that of an elderly maiden lady who, since a somewhat serious operation some twenty-one months previously, had suffered from a succession of very painful deep-seated boils. In addition she had constantly suffered from superficial boils and pimples which had made sitting uncomfortable. There was also a pustular discharge occurring intermittently from her nose and ears. A sample of blood was examined; the patient was inoculated with 0.75 cubic centimeter of staphylococcus vaccine.

As in the case of the first patient, no indications were obtained of anything in the nature of an inhibitory effect being exerted upon the staphylococcus by either the control blood or the patient's blood. In connection with the other cases, it was noted that the difference between the blood of patients suffering from staphylococcus invasions and the blood of normal persons is to be sought elsewhere.

After a free interval of three and a half months, as she had been warned, a deep-seated boil developed. About three months afterward the patient reported that there had not been any other recurrence, and that she was no longer troubled with pimples.

The third case was that of a medical man, thirty years old, who had suffered for about twelve months from small but very irritable pustular pimples and superficial boils on the back of the neck. A cultivation of staphylococcus albus was obtained from one of the boils.

Inoculation was made with one cubic centimeter of the same staphylococcus vaccine which had been employed in the second case. At various times subsequently other inoculations were made with cultures obtained from the patient himself and from the other cases reported above. Cure was obtained in about three months.

Three important points were clearly brought out by the observations made upon the patient: (1) The first of these points is that changes in the phagocytic power of the blood in the form of a negative phase of diminished phagocytic power succeeded by a positive phase of increased phagocytic power follow upon a staphylococcus inoculation. The negative and positive phases obtained were plainly precisely analogous to the negative and positive phases of bactericidal power shown to supervene upon an anti-typhoid inoculation. They are analogous also to the negative and positive phases which Ehrlich and Madsen have shown to supervene upon the inoculation of tetanus and diphtheria toxin respectively. (2) The second and equally important point which is brought out by the comparison of the clinical record with the results of the blood examination is that the negative and positive phases of phagocytic power stand in the very closest relation to the resisting power of the organism. So close and intimate does that association appear to be that it was, in this and the subsequent cases, always easy from the consideration of the local appearances to anticipate the results of the phagocytic estimation. (3) The general result of the blood examinations is in entire accordance with the theory of immunity put forward by Metchnikoff.

A patient, whose face and head were entirely swathed in dressings, was suffering from a very aggravated form of

sycosis complicated by eczema. The whole area of the chin, the cheeks, and the under surface of the jaw was extensively infiltrated and was thickly covered in places with moist scabs. A number of pustular points were interspersed between the prominences corresponding to the inflamed hair follicles. The bony contours of the jaw were almost obliterated by dense masses of infiltrated tissue. The scalp, and in particular that portion of it overlying the squamous portion of the left temporal bone, was the seat of a scabby seropustular affection corresponding to that described under the name of acne varioliformis. The eyebrows and the margins of the eyelids were the seat of a chronic pustular inflammation.

It would appear from the consideration of this case, taken in association with the cases already considered, that where the scale is turned against the invading staphylococci, it is turned not by a change produced in the blood-fluids, but by a succession of immunizing impulses, each such impulse expressing itself in an inflammatory (phagocytic) reaction localized in the invaded tissues.

The results of the continuation of the treatment for about three months and a half have confirmed the premonitions of a proneness to relapse to be gathered from the previous history, as well as from the results of the blood examinations and clinical data. In each case, after an improvement extending over three or four days subsequently to inoculation, symptoms of a certain amount of relapse have manifested themselves both in the condition of the local infection and in the results of the blood examinations. At present, after ten further staphylococcus inoculations which have been timed, and varied with respect to dose, in accordance with the results of the daily blood examinations, the patient's condition is still that of a chronic staphylococcus invasion associated in places with a certain amount of scabbing and infiltration. There would thus appear to be a very definite limit to the defensive reaction of the organism, a limit which comes into consideration also in the case of other inoculations.

The sixth patient was a man of forty, who, a fortnight before making complaint, began to suffer from an acute inflammation of the hair follicles of the chin and neck associated with a considerable amount of serous discharge and itching. After the second inoculation, resorted to to check the falling away of the phagocytic power which manifested itself on the third day after the first inoculation, a pronounced negative phase of diminished phagocytic power came under observation. At the date of the patient's discharge, practically well, the negative phase was apparently giving place to a positive phase of increased phagocytic power.

Wright suggests that the application of these vaccines might be advantageous in connection with compound fracture and in connection with operative procedures, such as those associated with the upper jaw and air-passages, where it is impossible to secure the asepticity of the wound. He is willing, also, to place at the disposal of any medical man a supply of the vaccine, that there may be observed its application in connection with anti-smallpox vaccination. It would probably be desirable to determine how far the staphylococcus is responsible for the symptoms which have done so much to discredit vaccination in the popular mind. The vaccine might find a useful application in connection with the treatment of sores, old ulcers, sinuses, and septic vaccination wounds.

Referring to the possibility of a still wider extension of the treatment of localized inflammatory conditions by inoculaton, Wright points out that the ideal to be kept in view must everywhere be so to graduate the doses of the bacterial vaccine and so to time the injections as to leave to the infected patient in any negative phase which may supervene after inoculation a sufficient margin of resistance to safeguard him against any generalization of his infection.

Patients who have been suffering from long-continued localized inflammation processes would seem, so far as can be judged from clinical experience, to have acquired a defensive power such as suffices to ward off the more generalized forms of their particular infections. Where bacterial invasions manifest themselves only under the form of "surface invasions" the conditions in the interior of the organism must be assumed to be

ab initio hostile to the growth of the invading microörganisms.

These considerations would seem to point to the desirability of testing the effect of therapeutic inoculations of sterilized streptococcus cultures in the case of patients who are the subjects of indolent and relapsing forms of erysipelas. In applying an inoculation treatment to the forms of erysipelas referred to it would of course be necessary to keep in view the fact that the streptococcus possesses, as compared with the staphylococcus, a much greater capacity for generalizing itself in the organism.

There would be opportunity of applying such inoculations in connection with the treatment of bronchitis, ozena, gleet, leucorrhea, and those forms of the bacteriuria which depend upon a bacterial invasion of the mucous membranes of the genito-urinary tract. It would of course be necessary in each case, after determining the particular species of invading microörganism which was giving rise to trouble, to consider (1) the question of technique in connection with the preparation of the vaccine; (2) the question as to whether the particular invading microorganism possessed any power of generalizing itself in the system; and (3) the question of the resisting and reacting power of the particular patient.

KNEE-JOINT DERANGEMENT AND OPERATIVE TREATMENT.

A large proportion of the so-called internal derangements of the knee are truly ruptures, says MAYO ROBSON (*British Medical Journal*, April 12, 1902), or fractures of either the internal or external semilunar cartilages.

This accident may occur in many occupations or in case of any sudden strain on the knee when flexed and suddenly extended, yet it so frequently occurs in miners or quarrymen that it might not inaptly be termed miners' knee.

Flexion and extension of the knee are always accompanied by some rotation, inward during flexion, outward during extension, and during flexion the ligaments are relaxed, and the semilunar cartilages alter their relation with the femur and tibia. If any violent or sudden movement occurs—for instance, sudden extension of the joint—the cartilage may be caught in its wrong position and nipped, like a nut between a pair of crackers, with enormous force owing to the length of the levers, leading to its fracture transversely or anteroposteriorly, or to rupture of the anterior or posterior attachment of the coronary ligament.

In by far the greater number of cases of internal derangement, there is a history of some slip or sprain or of some accident more or less severe, as in playing football; but in many cases, as in fact occurs so often in miners, simply extending the knee after flexion in a cramped position is responsible for the rupture.

Although after replacement by manipulation, rest and ordinary treatment soon relieve, and if persevered in sufficiently long may cure, yet in many of these cases relapses occur so frequently that relief by surgical treatment has to be sought.

The operation is one of the simplest. An oblique incision is made from the inner border of the lower end of the patella downward and backward, down to and through the synovial membrane, so as to open the joint freely without dividing either the ligamentum patellæ or the internal lateral ligament of the knee. If the external cartilage be displaced, then the incision is of course on the outer side of the joint. On retracting the edges of the incision and flexing the knee the displacement at once becomes manifest. To seize the loose portion of cartilage and snip it off by means of scissors is the work of a few moments, after which the synovial membrane, capsule of the knee, and skin are separately sutured. The whole operation is carried out under the strictest asepsis. It is both unnecessary and inadvisable to insert the finger into the joint or to syringe the articular cavity.

In no case has any inconvenience been experienced by the loss of the cartilage which Robson of late has cut away, and loose fragments of the functions of the knee-joint have on recovery been as perfect as before the accident originally causing the disability.

The number of times the external cartilage was injured gives a much larger proportion than is usually acknowledged in text-books or than is given by recent writers.

In case of any recent injury with signs

of internal derangement, the case should be treated as if it were a fractured bone, first replacing it by the ordinary method long ago described by Hey, and then fixing the knee in a splint until all effusion has subsided, afterward applying a plaster or starch bandage, and allowing the patient either to rest completely for a month or six weeks, or to go about on a Thomas knee-splint, then securing a return of function in the knee by massage and gentle movement. If after this thorough treatment there should be any tendency to weakness or to recurrence of displacement, operation is advisable.

If thorough treatment has not been followed out in the first instance, and the patient seeks advice for recurring displacements, the operation is one that can be recommended both for its safety and efficacy.

Of the 33 cases operated on, 21 were for fractured cartilages, 4 were for loose cartilages, 8 were for loose bodies in the knee-joint. In 21 cases the internal cartilages were affected; in 4 the external cartilages were affected, in 1 both internal and external were displaced; in 20 the fractured cartilage was excised; in 5 the displaced cartilage was sutured.

In only seven of the cases was there no history of injury, and all these, except one of loose cartilage in a woman, were cases of detached bodies in the joint. In all the semilunar cartilage cases except one there was a clear history of injury. Nine of the patients were miners. All except one were men, mostly quarrymen or laborers.

RECTAL CARCINOMA, AND THE PROLONGATION OF LIFE BY COLOTOMY.

The value, in some degree, of surgical interference in rectal carcinoma may be indicated by the record of thirty-six cases obtained by MILWARD *(Birmingham Medical Review,* May, 1902), covering a period of two and one-half years. Nearly all the cases were treated by inguinal colotomy.

Out of twenty cases that replied, three had refused operation in the hospital, and they lived four, nine, and eleven months respectively after leaving it. Out of seventeen cases in which colotomy was performed, three, worn out by emaciation and exhaustion before admission, died in hospital, twenty-five, twenty-six, and thirty-six days respectively after colotomy; eleven died at home at the following periods after operation—one at one month, three at four months, three at six months, two at seven months, one at eight months, and one at twelve months; three are still alive at seventeen, eighteen, and twenty-three months respectively.

Of the last three, the first, a woman, aged fifty-six, passes blood and sometimes feces *per anum,* is a martyr to pain, and "prays" to die.

The second, a man aged thirty, has had symptoms of carcinoma for two and a half years, and has been colotomied for eighteen months. The growth is now involving the anus, and protruding from it. When last seen, four months ago, he could do his day's work, could walk about briskly, and did not look very cachectic. He was troubled by pain and hemorrhage, but not severely. He obtains much relief from morphine suppositories. He wrote lately that he was in much the same condition.

The third surviving case, a man aged forty-two, colotomied now twenty-three months ago, wrote lately that the operation continued to act pretty well; that he was sometimes better and sometimes worse; and that occasionally he had very bad turns with much pain and discharge.

These figures do not point to any great benefit to be derived from colotomy as far as time goes, with the exception of the last two. Three only out of seventeen survived more than twelve months.

CONTINUOUS BATHS IN SURGERY.

The continuous bath does not appear to be given the recognition it probably deserves in surgical infections. This, despite the fact that nearly all the literature on the subject is favorable to such a method of treatment.

The water should be clean, preferably running, warmed to about the body temperature, and should have a specific gravity approaching that of the blood serum. To maintain the temperature add a little warm water every half-hour, taking out a similar quantity. The entire volume of water, in addition, should be changed three or four times in the twenty-four hours. The specific gravity may be raised

to approximate 1.028 by adding one drachm of common salt to a quart of water. A little boric may be added for its antiseptic influence.

The continuous bath, according to PRESSLY (*Maryland Medical Journal*, June, 1902), has several advantages. The warm water is an anodyne. The patient suffers less pain and requires less opium than under any other treatment. The afflicted member being floated up by the water, moreover, may be moved by the patient. His comfort is again increased by not being forced to remain immovable for a more or less prolonged period.

The odor from offensive wounds is controlled better than in any other way. The water absorbs the odors. The immersion treatment constitutes the most perfect drainage attainable. By a constant interchange of fluids the poisoned discharges are continually removed from absorbing surfaces, and the patient's prospects of recovery enhanced accordingly.

A few precautions should be mentioned. Look on the bath as a dressing only; it will not take the place of any operative procedure. Free incision into infected areas is just as essential as under the other lines of treatment. Necrotic tissue must be trimmed off regularly and carefully. See to it that there is no burrowing of inflammatory products. In superficial lesions, as in burns and bed-sores, the bath has its greatest usefulness, but even in deeper infections where the operative work is carefully done the tub will give brilliant results. Be careful that the water is kept warm. If the patient becomes exhausted and does not bear the tub well, make the bath intermittent. Avoid the hanging downward of an infected member; and, if it is the lower extremity, be sure that the veins in the popliteal region are not compressed, thereby cutting off return circulation. In recent wounds it is well to put on a dry dressing for six or eight hours in order that all oozing may be controlled. Support the patient by careful feeding and strychnine and whiskey just as under other treatment. Do not become alarmed if the limb becomes considerably swollen and the wound covered with a white deposit. The swelling is not inflammatory, and the deposit is not diphtheritic. If the work is carefully and systematically done it will not be found so burdensome. Instead of making patients uncomfortable, it will be found that their comfort is materially increased, and they will request to be left in the tub.

INTESTINAL OBSTRUCTION BY BANDS.

The occurrence of intestinal obstruction by bands is a rarity in surgical experience. To avoid this, and all similar postoperative complications, the surgeon should exercise great care in the technique, and especially in the finishing of operations. It is important to adopt all devices to leave the field of operation covered with smooth peritoneum, such as inversion of the appendix into the bowel, leaving a smooth peritoneal surface, with no raw stump projecting into it, or in pelvic operations folding the broad ligaments over the stumps of the amputated tubes and ovaries.

The symptoms of strangulation by adhesions are those of acute obstruction of the bowels from other causes. They are somewhat dependent upon the obstruction of the current of gas and feces in the bowel, but in greater degree upon the obstruction of the circulation of the blood in the bowel. The movements of the bowel to escape obstruction frequently result in the wedging of more bowel, and the onset of acute symptoms. There is thus pain of the most acute character, vomiting, general pallor and sweating of the skin, and something in the general appearance of the patient which suggests that serious trouble is present. The pain and vomiting are followed by a distention of the abdomen, which, in strangulation by a band, is at first local. The intestine becomes distended at first just above the seat of the constriction, so that at that time only a single coil is obstructed. If the abdomen, then, is not too thick and muscular, the surgeon may have an opportunity to note the distention of a single coil of intestine, followed later by general distention, with corresponding increase in the severity of the symptoms. The surgeon, however, will probably be called too late to observe this symptom. Abdominal tenderness will at first be noted directly over the seat of the trouble. It will later become more general, and will be attended by spasm of the abdominal

muscle. This spasm may be very slight in character. The symptom of obstruction of the passage of the feces where the bowel is strangulated may be wanting. The careless observer may be easily deceived by movements of the bowels which empty the intestine only below the point of obstruction. The cessation of vomiting when the patient is put to bed and starvation by mouth is enforced should not be interpreted as a sign that the obstruction has been permanently relieved. In cases where there is serious doubt as to whether obstruction exists, the abdomen should be opened.

When done early, the operation is simple and most satisfactory. Quickly open the abdomen, divide the band, watch the intestine change from dark purple to bright red, and sew up again.

Where the blood supply has been absolutely shut off, necrosis may take place within a very few hours, and the operator may find the bowel so completely gangrenous that resection of the intestine is the only alternative. This operation has to be done rapidly to give the patient a chance to recover.

Four cases of obstruction by bands are reported by LUND (*Boston Medical and Surgical Journal,* May 29, 1902). In the first case there was acute obstruction by a band extending from one part of the intestine to another, coming on three weeks after laparotomy. Operation took place twelve hours after the appearance of the first symptom. The band was divided. The patient recovered.

In the second case there was obstruction of the upper part of the small intestine by a band eight weeks after an operation for acute appendicitis. Gangrene of a narrow ring of bowel was present beneath the obstructing band. The band was divided, and the gangrenous part of the bowel was inverted. The patient recovered.

The third patient underwent an operation nineteen months previous for perforation of a gastric ulcer. Near the time of the second operation he was overcome by gas in a manhole. Vomiting attacked him. The symptoms accompanying this were such that operation was deemed advisable. Two bands were found near the scars of the first operation. These were cut, but no gas escaped and the bowel did not collapse. The coil was hung over the side of the patient and incised, allowing a large amount of feces and gas to escape. The incision in the bowel was quickly closed, and a dark-blue patch, thought to be gangrenous, was folded in. The abdominal wound was quickly sutured, the completion of the operation being made difficult by constant vomiting. On coming out of the ether the vomiting ceased, and the patient made an uninterrupted recovery.

In the fourth case there was obstruction by a band six months after operation for peritoneal cysts. There was rapid gangrene of the intestine. The operation took place twenty-four hours after the first symptom appeared. The gangrenous bowel was resected, and the patient recovered. The portion of bowel removed measured twenty-one inches in length.

CONGENITAL FACTOR IN HERNIA.

Inguinal hernia, it is almost universally held, is often the result of some congenital weakness of the inguinal abdominal wall, which permits the descent of a rupture. Instead of the weakness being congenital, RUSSELL (*Intercolonial Medical Journal,* April 20, 1902) believes the hernial sac alone to be congenital. This means, in practice, that if the sac be removed on the first occurrence of the hernia the abdominal wall will thenceforward be unimpaired. The patient will be no more predisposed to recurrence than he would if he had never had a congenital sac nor a hernia.

A blacksmith twenty-four years old became suddenly ruptured while playing football. The bowel four months later was found to have entered one portion of a bilocular congenital sac. The entire sac was ligatured at the neck and removed after incision of the external oblique aponeurosis. No attempt was made to close the canal with sutures. After keeping his bed for two weeks, exercising caution for a month afterwards, the patient was allowed to return to his work and to an unstinted indulgence in athletic exercises. He has become one of the best players on the best team of Melbourne.

The sac was unquestionably congenital and was the essential cause of the hernia, no matter about the immediate cause.

Simple removal of the sac was sufficient to cure the hernia absolutely.

In only two out of 115 cases has Russell had anything in the nature of a recurrence. The recurrence in each case consisted of a slight yielding of the abdominal wall, the result of the acquired weakness. Both occurred two or three months after the operation, and both were remedied with a light truss worn for three months. One was a boy, aged ten, who had worn a truss from infancy. He brought about the recurrence through attempting some acrobatic feats. The other child, aged five, fell out of a tree and struck the ground with his stomach.

Where the bladder intrudes its presence at the neck of the sac, the application of a ligature at the surgeon's seat of election will be interfered with. The bladder, in such cases, may be quite easily peeled off the sac. This proceeding is facilitated by the introduction of the index-finger into the sac.

Hernia of the bladder is doubtless secondary to an ordinary hernia. It is an accidental result of the dragging down of the vesical peritoneum through the hernial orifice.

Hernia of the sigmoid flexure of the left side has been met but once in Russell's 115 cases in children. In a relatively inconsiderable series of adult operations, he has met it three times. The ages of all the patients were, respectively, two, twenty-two, thirty-two, and sixty-eight years. The portion of the sac to which the bowel is attached should be cut away from the remainder, and returned into the abdomen with the gut. To do this, run the scissors up on either side of the prolapsed gut as high as possible; the remainder of the sac, after the bowel has been returned, may be ligatured and removed in the ordinary way. The patients have not had recurrence, after more than three years' time. In all the adults, the canal was opened up by incision of the external oblique aponeurosis. This step in the case of the little child was considered unnecessary.

Femoral hernia, Russell now believes, is, like inguinal hernia, caused essentially and typically by the presence of a congenital sac in the crural canal. There is doubt whether femoral hernia is ever truly acquired. On this theory it is vain to endeavor to block the crural canal, or to close the crural ring by sutures or other devices.

STATUS LYMPHATICUS.

The majority of the sudden deaths from enlargement of the thymus gland, reported in recent years, have occurred during or in immediate connection with the administration of an anesthetic, usually chloroform.

A long series of cases carefully studied by competent observers seems to prove, according to BLAKE (*Annals of Surgery*, June, 1902), that the condition is a pathological entity, and is characterized clinically by a lowered vitality or an unstable equilibrium of the vital forces, so that accidents or disturbances, otherwise unimportant, such as some slight injury or anesthesia, may precipitate failure of the heart and respiration.

The association of status lymphaticus with rachitis, and the frequency of the latter in the negro, appear suggestive.

Of the seven cases reported by Blake, one occurred in a non-adult.

Any evidence of the status lymphaticus in patients having any variety of goitre should raise serious doubts of the propriety of operative interference.

The exhibition of an anesthetic in patients having this affliction is at least frequently fatal. The patients may pass through one or two anesthetics and succumb to the second or third. There is evidence showing that chloroform is the most dangerous anesthetic, though some hold that the affection is responsible for most of the chloroform deaths.

The premonitory symptoms may be absent or extend over a considerable period. They are those of cardiac and respiratory failure, and consist of pallor, dilatation of the pupils, weakening of the pulse, and shallow respirations. The anesthetic should be at once stopped. The most rational treatment would seem to be direct stimulation of the heart by massage, heat, or electricity, and the injection of cardiac stimulants.

Death may occur at any stage of the anesthesia, or even after some hours have elapsed.

A definite diagnosis before death seems an impossibility. Of chief importance are evidences of lymphatic hyperplasia.

The tongue, nasopharynx, and fauces should be examined as well as the superficial lymph nodes. The mesenteric glands may sometimes be palpable. The spleen is usually only slightly enlarged.

Examination of the blood may be negative, but there may be a well marked lymphocytosis. The antecedent history of the patient may be negative. Attacks of laryngismus stridulus in children, or dyspnea, should be noted. Attacks of syncope in adults would seem to be the only subjective symptom. Proof of the existence of hypoplasia of the aorta is wellnigh impossible, but its presence may be denoted by absence of aortic pulsation in the neck, narrowness of the peripheral arteries, and defective development of some of the organs, especially the sexual apparatus. The presence of rachitis or enlargement of the thyroid would probably be additional proof of the presence of status lymphaticus.

GASTROENTEROSTOMY FOR INTRINSIC STENOSIS OF THE PYLORUS.

When the indications are similar to those for gastrostomy—difficulty in the onward passage of food, vomiting, progressive emaciation, and subnormal temperature—gastroenterostomy may not be delayed without serious risk. Even if life is not prolonged by the operation, CAIRD *(Medical Press,* May 28, 1902) holds that the discomfort of the patient is much lessened. There is sometimes a great gain in weight. The tumor sometimes entirely disappears after the operation.

A posterior gastrojejunostomy as close to the duodenum as convenient is preferred, or, in the complicated cases, an anterior operation. The method is determined by what is found on opening the abdomen, and by the extent to which the stomach remains mobile. Whether the food current is isoperistaltic or antiperistaltic does not make much difference.

No special preparation is required. Warm milk and water may be given the evening before operation if the general condition is poor, and a small dose of morphine if there be pain or restlessness. On the morning succeeding operation, if there is eructation, vomiting, or quickened pulse, the stomach is washed out, but syncope should be guarded against. If the pulse still remains rapid, after lavage, thirty ounces of saline solution should be transfused.

Of Caird's twenty-one cases, four proved fatal: One died of bronchopneumonia and congestion of the kidneys, the abdominal wound remaining healthy; another case died from exhaustion; a third from leakage through a wound in the stomach; and in the fourth case peritonitis ensued, probably from aerial infection.

Of the seventeen that survived the operation, six eventually died: three from extension of the disease, two from cardiac failure, and one from phthisis. Eight patients are alive, at periods extending up to six years since operation.

A second laparotomy has been performed in two: in one for ventral hernia —at the operation no trace of the old tumor could be found; in a second for nodules in the cicatrix—here also the abdomen appeared free from the disease.

The great improvement may not be due to laparotomy alone, but others have reported improvement in abdominal cancer after simply opening the abdomen.

LUNG COMPLICATIONS IN APPENDICITIS.

Lung complications are a known phase in laparotomy. The symptoms are sometimes mild, and the attack does not influence recovery. The complications, according to SONNENBURG *(Medical Press,* May 28, 1902), are not frequent. The affection is probably of embolic origin. Ether narcosis certainly does not set up the disease. Exposure to cold is not of any importance. Hypostatic pneumonia is rare. Every exudation near the vermiform appendix readily gives rise to embolism. In lung affections the embolism is never from the portal system, but from the vena cava. There are thromboses and embolism in about five per cent of operation cases.

The emboli are also of an infective nature. Emboli occur also in operations performed during the interval. Emboli might also occur during the after-treatment, through the formation of thrombi. The reason for this is to be found in the fact that patients of the better classes are very anxious and have flabby hearts, whereby disturbances of circulation are caused. The thromboses are caused by tearing of vessels when the appendix is

being freed from attachments. Embolism of the pulmonary artery does not betray itself by any special symptoms. If the lung complication is caused by embolism no digitalis is to be given, but the patients must lie in a raised-up position, and morphine be administered.

FRACTURES OF THE UPPER THIRD OF THE FEMUR.

There are teachers of surgery who think it a criminal procedure to treat a fracture of the upper or lower third of the femur in a straight position, but BURT (*New York Medical Journal,* May 31, 1902) has never had reason to repent discarding double-inclined planes and flexed positions in his large experience.

He was called in to see the case of a boy of sixteen after three other physicians had put up the fracture in the flexed position. With all they could do the upper fragment was plainly visible projecting forward and outward. The flexed apparatus was removed and Buck's extension applied. The projection forward of the upper fragment disappeared in a great measure almost immediately. The patient got well, and when last examined scarcely favored the injured limb at all; its contour was normal. Any unevenness on the outer side could not be detected, nor was there shortening to the extent of five millimeters.

It is next to impossible for the surgeon to visit a case several miles in the country and make daily changes of the dressings, as is required with the extension splint, whereas any onlooker can attend to the treatment by Buck's plan; and then, again, it is so simple, no special apparatus being required. The use of an anesthetic is seldom required, unless it is thought desirable to use plaster of Paris, both as a coaptation splint and to prevent shortening after reducing the fracture.

PROSTATIC HYPERTROPHY: SURGICAL TREATMENT.

After a review of recent literature on the subject and of his own experience, CHETWOOD (*New York Medical Journal,* May 31, 1902) arrives at the following conclusions concerning the surgical treatment of prostatic hypertrophy.

Palliative measures should not be persisted in when they fail after reasonable trial to produce and maintain an abatement of symptoms.

A first infection of the bladder is not alone sufficient excuse for operation unless palliative measures fail to promptly subdue inflammatory conditions.

Recurring infection of the bladder or ascending infection of the kidney is sufficient warrant for operative interference.

There is a growing tendency toward earlier operation than was formerly practiced.

The greater number of cases of prostatic hypertrophy can be satisfactorily reached through a perineal incision.

In the large majority of cases the requirements of any operation upon the prostate consist of the removal of the obstructing area and depressing the bladder opening into the prostate, so that the basfond may be properly drained.

In many cases the obstructing area of the hypertrophied gland can be satisfactorily reached and effectually removed through a perineal opening by means of galvanocaustic incisions.

Reviews.

THE DISEASES OF INFANCY AND CHILDHOOD. Designed for the Use of Students and Practitioners of Medicine. By Henry Koplik, M.D. Copiously Illustrated.
Philadelphia: Lea Brothers & Co., 1902.

We have awaited the appearance of Dr. Koplik's book upon diseases of children with much interest because he has been actively engaged in the study of this subject for a number of years, and has made a large number of valuable contributions to its literature. Even a hurried examination of the present volume will reveal the fact that it is not, and probably was not intended to be, by any means so exhaustive a work as the well-known volume by Holt, or that by Rotch. Nor does it deal with the literature of pediatrics to the extent of the work by J. Lewis Smith, nor, if we compare it with a still earlier well known work, of "Meigs and Pepper," which for so long was a professional standard. On the contrary, this book seems to be largely written from a personal standpoint, and therefore possesses all the advantage of representing the author's individual experience, and all the

disadvantages of failing to quote the opinions of others who may be in discord with his views.

Naturally, one of the first things which attracts our attention in a work which is so profusely illustrated is the character of the illustrations. These, as a rule, are apparently reproduced from drawings rather than from photographs, although the latter method is that commonly resorted to in illustrating text-books at this time. The result, while accurate from one point of view, is from another inaccurate to some extent. Thus, the face of the child in Plate 4, illustrating hematoma of the sternomastoid muscle in a new-born infant, is much more like the face of a child of eighteen months or two years, and other instances might be cited in which similar mistakes have been made; the artist paying more attention to some details than to those which are needed to complete the picture. The same criticism also holds true to some extent of Plate 15. We also notice with interest that Plate 16 recommends that exploratory puncture in pleural effusion shall be done in the posterior portion of the chest quite close to the vertebra. We do not think that this is a method advised or followed by the majority of clinicians to-day. We are also somewhat interested to note that under Constipation, which is discussed in about four pages, Dr. Koplik has included so-called "Mucous Colitis" or "Mucous Disease." Our conception of Mucous Disease, as originally described by Eustace Smith of London, hardly agrees with this arrangement of the text. We also think that the chapter on Acute Intestinal Obstruction should be more full. At the present time, it deals solely with that form of obstruction which is due to intussusception, and nothing is said of the other causes of this malady. In the article on Appendicitis, nothing is said about the frequency with which typhoid fever in children produces symptoms which are apparently appendicular in origin. Numerous additional criticisms of this kind might be made in regard to this volume, but these are not to be considered as indicative that we have formed a poor opinion of it. On the contrary, it is a most excellent record of Dr. Koplik's personal views, and as such commands careful study from all those who are interested in the important subject of children's diseases.

DISEASES OF THE EYE. A Handbook of Ophthalmological Practice for Students and Practitioners. By G. E. de Schweinitz, A.M., M.D. Copiously Illustrated. Fourth Edition, Thoroughly Revised.
Philadelphia: W. B. Saunders & Co., 1902.

Dr. de Schweinitz has had so large an experience both as a teacher and clinician, and has done so much original work in his chosen field of ophthalmology, that a text-book coming from his pen necessarily represents the latest and best of all that is known in regard to this important subject, and it is to be remembered that not only is ophthalmology of great importance in so far as it deals with the preservation of an important special sense, but it is also not to be forgotten that a careful examination and study of the eye will frequently give us most important diagnostic data in regard to the condition of the kidneys, the blood-vessels, and the brain.

The present edition has been somewhat enlarged, some of the chapters have been practically rewritten, and careful directions are to be found in every instance in regard to treatment and diagnosis. Numerous original colored plates and black-and-white sketches aid very materially in making diagnostic descriptions and therapeutic measures clear. Altogether the fifth edition of Dr. de Schweinitz's book may be considered as the representative work on this subject in the United States.

A TEXT-BOOK OF HISTOLOGY AND MICROSCOPICAL ANATOMY OF THE HUMAN BODY, INCLUDING MICROSCOPIC TECHNIQUE. By Dr. Ladislaus Szymonowicz. Translated and Edited by John Bruce MacCallum.
Philadelphia: Lea Brothers & Co., 1902.

Szymonowicz is so well known as an original investigator in this important field that anything which comes from his pen at once commands attention. We have in these columns during the last few years reviewed several most excellent works dealing with this subject. With the appearance of each we have marveled that there was room for its existence, and have found it difficult to decide as to which was the best of them, since all seemed to be published in handsome form with good type and paper, with copious illustration, and to be characterized by the most accurate descriptions. But if we have thought

that the best in the way of histological text-books had already appeared, we are forced to modify our views by reason of the existence of this one. The illustrations are most excellent, and the translator has done his work in such a way that the text reads as smoothly as if it had originally been written in English. We feel it our duty to call the attention of all teachers of histology to this work, which has been enriched not only by the clever translator, but by his addition of illustrations which add value to those already found in the original book as it appeared in Europe.

A Photographic Atlas of Diseases of the Skin. By George Henry Fox, A.M., M.D. Parts 10, 11, 12, 13, 14, 15, 16.
Philadelphia: The J. B. Lippincott Co., 1902.

We have already published reviews, or notices, of the first nine parts of this most excellent Atlas, and in doing so we called attention to the fact that Dr. Fox had been for many years well known to the profession as a collector of illustrations typifying skin lesions. Many years ago he brought out an excellent Atlas on this subject, before the methods of illustration were nearly so good as they are at present, and now with the improved methods and his larger experience, he presents us with a work which is not only correct in its detail and accurate in its representation of skin lesions, but is also of value because it gives us definite diagnostic and therapeutic directions. It is to be feared that the average practitioner fails to pay as much attention as he should in his student days to the study of diseases of the skin, with the result that on graduation he finds himself sadly ignorant when called upon to diagnose and treat these conditions. Such an Atlas as this forms an excellent post-graduate course, which can be taken by any one who desires to make himself acquainted with the newest things and best views in dermatology.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Assisted by H. R. M. Landis, M.D. Volume III, September, 1902.
Philadelphia: Lea Brothers & Co., 1902.

This volume of Progressive Medicine contains, as have its predecessors which have appeared at this season of the year, articles dealing with the diseases of the thorax and its viscera, including the heart, lungs, and blood-vessels, by Dr. William Ewart of London; on Dermatology and Syphilis, by Dr. William S. Gottheil of New York; on Diseases of the Nervous System, by Dr. William G. Spiller of Philadelphia; and on Obstetrics, by Dr. Richard C. Norris of Philadelphia. Dr. Ewart's article is particularly interesting because he has gone over the whole literature dealing with his department most exhaustively, and has picked from it those facts which he thinks are worthy of our consideration. Almost everything that he has to say is associated, more or less, with the treatment which is considered advantageous. So, too, Dr. Gottheil's article may be considered as a most excellent summary of his branch. It is freely illustrated, exhaustive and clear, and distinct directions are given as to the methods of treatment which he considers advisable. Dr. Spiller's article reflects the great activity which is taking place in the investigation of the pathology of nervous diseases and calls attention in an interesting way to the bearing of various nervous symptoms upon the diagnosis of grave central and peripheral nervous changes. As with the first article in the volume by Dr. Ewart, so with the last article in the volume by Dr. Norris, it may be said that it will appeal more largely to the general practitioner than that upon the skin or upon the nervous system. Dr. Norris's experience as physician in charge of the Preston Retreat enables him to see a large number of patients who are under absolute control, and he can determine thereby, to a large extent, the value of the measures which are recommended by other obstetricians for the treatment of pregnant women. Most interesting descriptions are found in this article in regard to the diagnosis and pathology of extra-uterine pregnancy; the treatment of postpartum hemorrhage and the care of the woman during the puerperium. The volume closes with a complete and accurate index.

A Handbook of Physiology. Revised by William H. Rockwell, Jr., M.D., and Charles L. Dana, A.M., M.D. Seventeenth American Edition. Copiously Illustrated.
New York: William Wood & Co., 1902.

Graduates of twenty or thirty years ago will be interested to learn that this is a new edition of what they used to call Kirke's

Handbook of Physiology. At one time it was without doubt the best work in the English language for the medical student, but since then younger books have entered into active competition with it so that even the careful revisions which have taken place have hardly served to give it the freshness which is desirable in so rapidly advancing a science as physiology. We are interested to note that so able a neurologist as Dr. Dana has taken upon himself the responsibility of revising its text, but as his name occupies a secondary position on the title page we presume that most of the work was done by his younger associate. Their combined efforts have resulted in the production of a very useful text-book, which will doubtless be employed as such by a considerable number of medical schools during the coming year. The present edition is gotten up in a handsomer and more attractive form than some of its predecessors, and while our English cousins who are interested in the volume have from time to time uttered a protest against its publication on this side of the water, there can be no doubt that American medical students have learned and will learn much from its standard lines.

THE DISEASES OF INFANCY AND CHILDHOOD. For the Use of Students and Practitioners of Medicine. By L. Emmett-Holt, M.D., LL.D. Copiously Illustrated. Second Edition, Revised and Enlarged.
New York: D. Appleton & Co., 1902.

Dr. Holt's book on Diseases of Children is already well known as a most exhaustive and competent text-book embodying an immense amount of research in the dead-room, in the hospital ward, in private practice, and in pediatric literature. Indeed, it may be well said that the volume as it stands to-day is a most representative work and a credit to American medicine. It is to the pediatric literature of 1902 what Meigs and Pepper on Diseases of Children was to this literature twenty-five or thirty years ago. While the size of the book renders it rather large for the medical student, who must to some extent take a collateral view of diseases of children, it is nevertheless a volume which he can well purchase during his student days with the expectation that it will prove to him a most valuable work of reference when he gets into active practice, because it will give him complete information in regard to cases which may seem puzzling and obscure.

A HANDBOOK OF MEDICAL AND ORTHOPEDIC GYMNASTICS. By Anders Wide, M.D.
New York: The Funk & Wagnalls Co., 1902.

We are afraid that the valuable gymnastic exercises introduced by Ling in the early part of this century, expounded by Zander, Brandt, and others, have not made the impression upon American physicians which their importance deserves. This book, as its name indicates, is intended to illustrate clearly the methods which should be employed for the development of the muscles and the overcoming of pathological conditions where these exist. Almost every page in the early part of the volume contains an illustration of the motions which should be carried out for the proper development of the muscular system, and to those physicians who have patients who require such muscle training, and all of us in active practice have such, we can and do cordially recommend this volume.

THE ROLLER BANDAGE. By William Barton Hopkins, M.D. Illustrations. Fifth Edition, Revised.
Philadelphia: J. B. Lippincott Co., 1902.

This little book, in both illustrations and text, is characteristic of the admirable neatness which is a conspicuous feature of all of Hopkins's work. Two most useful dressings have been omitted—across the perineum, and the figure-of-eight of the leg, the only dressing which will make continued and efficient pressure on the leg of the ambulant patient. To compensate for this there is a brief but very excellent section devoted to plaster-of-Paris bandages, illustrating the method of suspending the fractured leg for the application of a fixed dressing, the hammock for the plaster-of-Paris jacket, and the use of the T-shaped rubber strip to facilitate the removal of fixed dressings. This book can be commended without reservation.

MATERIA MEDICA, THERAPEUTICS, MEDICAL PHARMACY, PRESCRIPTION-WRITING, AND MEDICAL LATIN. A Manual for Students and Practitioners. By William Schleif, Ph.G., M.D. Second Edition, Revised and Enlarged.
Philadelphia: Lea Brothers & Co., 1902.

This very comprehensive title embraces the material found in a small octavo of

389 pages. The text, so far as drugs are concerned, follows in its classification and description the well-known text-book of Dr. H. C. Wood. We have no doubt that to those students who employ Dr. Wood's text-book this manual will prove interesting and useful, since it may be regarded as a condensation of that work. It is impossible for it to be complete, and therefore it is of more value to the student who wishes to remember certain salient facts than to the practitioner who wishes therapeutic hints.

ELECTRO-THERAPEUTICAL PRACTICE. By Charles S. Neiswanger, Ph.G., M.D.
Chicago: E. H. Colgrove & Co., 1902.

This book, as its title indicates, sums up in a comparatively brief manner a large amount of information which is necessary for the practical application of electrotherapeutic measures. It is by no means an exhaustive or complete work dealing with this subject, and some of the therapeutic suggestions which are recommended would probably not be regarded with favor by certain electrotherapeutists who are considered conservative. It is a noticeable fact that practically all the illustrations are provided by the McIntosh Company, and that these are the poorest part of the book, apparently consisting of old woodcuts which have been worn down until they are pretty well blurred.

A COMPEND OF MODERN PHYSIOLOGY. Especially Adapted for the Use of Medical Students. By Albert P. Brubaker, M.D. Eleventh Edition, Revised and Enlarged. Illustrated.
Philadelphia: P. Blakiston's Son & Co., 1902.

Dr. Brubaker's little book on Physiology has now been before medical students for almost twenty years, during which time he has also been an active and successful teacher of physiology. It is a well-worn saying, but nevertheless a true one, that books of this type cannot be utilized to the exclusion of more complete manuals. On the other hand, they very frequently aid students in memorizing certain important facts about which they can cluster less important ones which go to make up a complete view of a study. We regret that the book contains so few illustrations, as we think that more of these would increase its usefulness. But the text is accurate, clear, and readily understood even by a tyro, and if a student could retain all that this book contains, he would be very well grounded in this important elementary science.

A GUIDE TO THE PRACTICAL EXAMINATION OF URINE. For the use of Physicians and Students. By James Tyson, M.D. Tenth Edition, Revised and Corrected.
Philadelphia: P. Blakiston's Son & Co., 1902.

"Tyson on the Urine" is a book familiar to many hundreds of American practitioners, being probably the best known manual dealing with this subject. Its author has for many years been actively engaged in the study of renal diseases and the changes which take place in the secretion of the kidneys, and naturally the advanced editions of his book represent his investigations and clinical experiences. Like his work on "Practice," the present one may be considered a standard on the subject with which it deals.

GENERAL PARESIS: PRACTICAL AND CLINICAL. By Robert Howland Chase, A.M., M.D.
Philadelphia: P. Blakiston's Son & Co., 1902.

If there be room for special monographs in medical literature, surely this one must take an honored place, since it embodies the clinical experience of one who has had a large experience in the treatment and care of patients suffering from this malady. The text consists in a consideration of the early, middle and late manifestations of general paresis, with a discussion of the characteristic hallucinations, facial expression, speech, handwriting, eye symptoms, and other conditions which are peculiar to this disease, and the volume closes with chapters upon the pathology and pathological anatomy and treatment of the malady. It is, as Dr. Chase points out, a matter of the very gravest importance that the general practitioner shall make himself familiar with the earlier manifestations of this distressing malady. For while the prognosis, after the condition is once established, is of course most unfavorable, the rapidity of onset may be diminished and disagreeable complications arising out of the failure to recognize that the patient is suffering from this disease may be avoided. The book is illustrated by a number of photographs of patients which are thought to present the facial characteristics of paresis. While these illustrations are good, in the sense that they are well

executed, we do not believe that they add materially to the value of the book so far as the general practitioner is concerned, for the writer of this review, while he recognizes certain facial characteristics in these pictures which are typical of paresis, notices others which, if they are typical, indicate that a considerable number of persons that one meets in the streets in daily life are suffering from a well-marked form of this disease.

PHYSICAL DIAGNOSIS: DISEASES OF THE THORACIC AND ABDOMINAL ORGANS. By Egbert Le Fevre, M.D. Illustrated.
Philadelphia and New York: Lea Brothers & Co., 1902.

The appearance of this small octavo of less than 450 pages, dealing with the important subject of physical diagnosis, inevitably calls forth a comparison between it and the later editions of the works of Gibson and Russell, Tyson, Herrick, and Cabot. On looking over its pages we fail to find that the book contains anything in the way of an original contribution to the subject with which it deals, nor do we find that the descriptive matter is arranged in a way which is novel. Doubtless, the author had no intention in compiling the book of making an original contribution to medical literature, even in the way in which his material was presented. But if he did not, the question arises as to why he should have thought it necessary to add another one to the list of admirable works on physical diagnosis. The answer probably lies in his desire to provide his own students with a handbook by means of which they could closely follow his personal teaching. The book can, however, be strongly recommended, since the descriptions are lucid and concise, and the advice which is given as to the proper means of making physical examinations is correct and easily understood. The student who purchases this book can rest assured that he will obtain a competent and complete description of the subject of physical diagnosis based upon the personal experience and wide reading of a skilled clinician.

DISINFECTION AND DISINFECTANTS. A Practical Guide for Sanitarians. M. J. Rosenau, M.D. Philadelphia: P. Blakiston's Son & Co., 1902.

Dr. Rosenau's small book upon disinfection and disinfectants has been written, he tells us, with the hope that it may help others who have to battle with the infection by communicable diseases, and the text is designed to initiate physicians into the proper measures which should be undertaken for the purpose of preventing the spread of disease by destroying the microörganisms which are peculiar to these maladies. The early chapters deal with the physical agents, such as sunlight, electricity, and heat, which are efficient in acting as disinfectants, then with ordinary disinfectants, with chemical solutions, and with insecticides in order to prevent the dissemination of insect-borne diseases. The fifth chapter deals with the disinfection of houses, shops, and objects, and the sixth chapter with the methods of disinfection which should be carried out in the presence of all the infectious diseases from typhoid fever to dengue, actinomycosis and whooping-cough. The book is copiously illustrated with nearly 100 pictures, and to the sanitarian can be most cordially recommended, first, because it is well written, and second, because Dr. Rosenau, in his active service as a member of the United States Marine Hospital Service, has had large experience, and is qualified to speak with authority.

THE PHARMACOLOGICAL ACTION AND THERAPEUTIC USES OF THE NITRITES AND ALLIED COMPOUNDS. By Daniel John Leech, Edited by R. B. Wild.
Manchester, England: Sherratt & Hughes, 1902.

The late Dr. Leech was one of the most active therapeutists in Great Britain, and from time to time made contributions to therapeutic literature which showed his wide knowledge of the subject on which he wrote. He was for many years particularly interested in the group of drugs which are generally known as the nitrites, and it had been his intention to publish a formal work concerning them. His unexpected demise prevented this, but his friend and assistant, Dr. Wild, has compiled his various lectures and writings on this subject in the little volume which is before us. Many of the facts which are reiterated are of course well known to every one who is in touch with the literature of this important subject. Other remarks, particularly those in regard to the use of sweet spirit of nitre for the purpose of reducing arterial tension, will probably strike some of our readers as novel.

Correspondence.

CALOMEL, ACIDS, AND PTYALISM.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: In reading over the October number of the GAZETTE, the first article has attracted attention. It is by Dr. M. H. Sprague, wherein he expresses just a little doubt regarding the safety of calomel either alone or in combination with other drugs, and as physicians among themselves are at variance on this subject, is it to be expected that our patients should have full confidence? I take the stand that "all drugs are good drugs" and very useful when their therapy is thoroughly understood and the application of them properly made when needed. In all the list of drugs and their various combinations I consider calomel—plain, old-fashioned, and by some much dreaded calomel—one of the most laudable. Without doubt calomel has been the most abused of any of our drugs. Like bleeding, it has been carried to the extreme in both directions: first by overdoing, then by almost complete, if not entire, disuse; when if either calomel or bleeding had been intelligently and judiciously employed better results would have been obtained.

Having spent most of my time since my "birth" into medicine in a territory filled with malarial fever, and using calomel every day of my practice, is what stimulates me to this contribution. While in college my professor of Materia Medica, Dr. William Bailey, University of Louisville, Ky., who was at that time nearly sixty years old and quite feeble from a lifetime of devotion to both teaching and practicing, while lecturing on mercury had this to say of calomel: "I consider it of the greatest value in many affections when properly used, and feel as though any ban placed on it has been so placed by the ignorant who were not versed in its administration, and had ptyalism as a rather constant result." It is just this ptyalism that has horrified the laity and created some doubt in the minds of physicians. This same venerable professor stated that it was not what was eaten while taking calomel that produced the disastrous result, as it was the length of time that it remained in the body, and stated that he would have no fear of taking a fair-sized dose and immediately or at any time thereafter eating several pickles. I had always looked upon this man as the "fountain of knowledge" on materia medica and therapeutics, but I admit that my opinion was somewhat shaken after this statement from him. However, I retained it along with many others of his wise teachings, and in after years have referred back to it as I have done to all of his statements, and duly labeled it "Demonstrated." I will cite two cases (I could make it two hundred) as being typical of my experience with the drug as demonstrating the truth of Dr. Bailey's statements on this subject:

CASE I.—J. W., old soldier, quite feeble, was suffering with complications due to malaria and resulting in a condition of autotoxemia from retained secretions and excretions, and in a state which is termed "biliousness" by the laity. I prescribed calomel tablets number seven, one grain each, and ordered one to be given each hour until all were gone. This was early in the morning. Still being a little skeptical as to the ingestion of sour food with calomel, I informed him as to what he was taking and instructed him to eat nothing sour. On my next visit to him the day following he stated that he was feeling better and had eaten a little. Upon further inquiry I ascertained to my consternation that he had eaten nothing but cucumbers and onions sliced in vinegar. To my agreeable surprise he was not salivated, and went on to an uneventful recovery.

CASE II.—Young man, twenty-eight years old, in pretty much the same condition as patient No. 1. I prescribed seven two-grain calomel tablets, one to be taken each hour until all were gone. Patient had a craving for lemons, and I was consulted about the lemons and gave my consent for them. He was given six lemons, and ate the entire six; in about two hours he ate several more. When I was told of the number he had eaten I was fearful, and followed the last of my tablets with a saline. No ptyalism occurred.

My experience has taught me that with the drug thoroughly moved out, there is absolutely no danger whatever to fear. I hardly like the idea of giving hydrochloric

or nitrohydrochloric acid at the same moment with calomel, but I would not hesitate the least to give them in alternating doses where the dose-time for both drugs would be one and a half or two hours, thus giving three-quarters to one hour between the two drugs. As for the excess of hydrochloric acid in the stomach, I doubt if this excess could ever be sufficient in itself to produce salivation when calomel is present. I invariably follow the use of calomel with a saline; even if the calomel has acted well and moved off freely, I give a small saline to make sure that none of the drug has been left behind to do injury. By this rule in using calomel I prescribe whatever I consider advisable to meet the other conditions, and if the selected remedies be acid or of an acid reaction I use them with the same impunity as though they were alkaline.

It has been clinically demonstrated in my hands that we are safe in using calomel in any dose, under any circumstances, where indicated. If in conjunction with any of its incompatibles a little tact is practiced in arranging the time of giving each drug the physician will be rid of this difficulty, and safe against dreaded ptyalism. One more point to be remembered is this: one-fourth of a grain of calomel is just as capable of producing ptyalism as three or four grains if it is allowed to remain in the patient; and really I watch my small doses with a greater degree of apprehension than I do the larger ones, for as a rule the latter will take care of themselves. Make it a rule to follow mercurials of whatever name with a good active saline, and experience will dissipate your fears like the morning vapors at sunrise.

Yours truly,

J. C. McINTIRE, M.D.

SPRINGERTON, ILL.

CALOMEL AND ACIDS.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: Referring to Dr. Sprague's article in the October number of the THERAPEUTIC GAZETTE, regarding the incompatibility of calomel with tincture of iron and the various acids, I desire to say that while I have had no experience in giving calomel and tincture of iron together, I frequently give lemonade in connection with calomel without any deleterious results. Before I began practicing medicine some ten years ago, I shared the common impression of the laity that to eat or drink anything sour after the exhibition of calomel was an absolute guarantee of a bad case of salivation. Some years ago I read an article from the pen of Dr. Ben H. Brodnax, of Brodnax, La., in which he advocated the free use of lemonade in the treatment of malarial affections, at the same time prescribing calomel with podophyllin and soda as a purgative.

Having quite a bit of malaria to treat, I took up this line of treatment, and was well pleased with it. I am now in the habit of prescribing for such cases about as follows: Calomel grs. ijss, pulverized ipecac gr. 1-4, podophyllin gr. 1-10, soda bicarb. gr. iij; pone in capsul. No. i. Give one every three hours until three are taken, and follow by a large dose of magnesium sulphate three hours after last capsule. I frequently have the capsules washed down with a glass of lemonade, and never have any ptyalism. I have had cases of salivation result from a much smaller quantity of calomel where nothing but water had been taken after the calomel was given, and when the calomel had remained too long in the bowel. I never apprehend ptyalism if I can get a free action of the bowels within twelve hours after giving calomel, and always allow my patients all the lemonade they want to drink; but I am always careful that they get a full dose of Epsom salts or castor oil after the calomel.

Every doctor who has practiced any length of time has noticed how firm in the minds of the laity is the idea that nothing must be taken after calomel, and there are many who cannot be persuaded to use lemonade when they know they have taken calomel.

Referring to Dr. Sprague's mention of the use of calomel and tincture of iron in the treatment of diphtheria, I would say that I believe calomel one of the most constantly reliable and efficient drugs we have in the early treatment of diphtheria. I usually give it in one-fourth to one-half grain doses every hour for from twenty-four to forty-eight hours, which usually produces from three to six evacuations. I remember one case of a girl thirteen years old to whom I gave 40 grains of calomel in forty-eight hours, producing only two stools, and no ptyalism or other bad re-

sults whatever. Diphtheria patients seem to possess a great tolerance of calomel. In laryngeal diphtheria I give it both internally and by fumigation, using for the purpose of fumigation six to ten grains every two or three hours, in a closed tent. In this manner I have seen the nurse slightly salivated when the patient presented no evidence of ptyalism. In fact, I am of the opinion that a mild degree of ptyalism would be very beneficial to the patient, on account of the solvent effect it would have on the membrane.

In connection with the above I use a gargle of tincture of chloride of iron, chlorate of potash, water, and glycerin. Some may say that this mixture is incompatible and dangerous. Perhaps so, but some good authors have recommended it, and I have used it in many cases with satisfactory results. I also use antitoxin in connection with the above, and if I had to give up either in the treatment of a case of diphtheria I would prefer the calomel, with gargle, and preceded by a thorough spraying H_2O_2, rather than depend on the antitoxin alone.

W. M. WHEELER, M.D.

GRAY SUMMIT, MISSOURI.

[It should be recalled that it is difficult to salivate children with mercury. We cannot agree with the writer in preferring calomel to antitoxin.—Ed.]

BACON FAT IN NOSEBLEED.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: Anent the discussion on the arrest of nosebleed by the introduction of a condom, recently published in the GAZETTE, I desire to give a very simple and easy method for controlling epistaxis that may prove valuable to many physicians, especially those living in the country, where condoms are not so easily procured as in cities. Take a piece of fat bacon about two or two and a half inches in length, and of sufficient size; cut it to proper shape, and as large as can be easily forced into the nostril; apply by pressing into the bleeding nostril, and let it remain in place several hours. This has served me well several times. It controls the hemorrhage and is not uncomfortable to the patient. I claim no originality, as I know of its having been used twenty years ago by an old practitioner who has long since gone to his final reward, and before I began the study of medicine.

J. L. ATKINSON, M.D.

CAMPBELLSVILLE, KENTUCKY.

A CASE OF PRECOCIOUS DEVELOPMENT

To the Editor of the THERAPEUTIC GAZETTE.

SIR: I enclose photograph of an interesting case of premature development.

H——, aged six years and nine months, weight 95 pounds, height 56 inches, chest

32 inches, thigh 17 inches. His genital development began at five years, and soon after his voice began to change. At present the beard is starting, and he has the voice, muscular and genital development of a man. Health has always been good, and intelligence equal to children of his age. His parents are people of usual size.

LINCOLN RILEY, M.D.

WISNER, NEBRASKA.